

## **Historic, archived document**

Do not assume content reflects current scientific knowledge, policies, or practices.



F7625 Uni  
Cop. 2

# Timber Flows and Utilization Patterns in the Douglas-fir Region, 1966

JOHN W. AUSTIN



PACIFIC NORTHWEST FOREST  
AND RANGE EXPERIMENT STATION  
FOREST SERVICE  
U. S. DEPARTMENT OF AGRICULTURE  
PORTLAND, OREGON

USDA FOREST SERVICE  
RESEARCH PAPER PNW-89  
1969

Cover photo: Courtesy Knappton Towboat Company.

# TABLE OF CONTENTS

	Page
SUMMARY . . . . .	1
INTRODUCTION . . . . .	3
Objectives . . . . .	3
Importance of Timber to Economic Areas . . . . .	5
Economic Setting in 1966 . . . . .	6
Collection of Data . . . . .	6
Industry Coverage . . . . .	7
Sawmills . . . . .	7
Plywood plants . . . . .	7
Shake and shingle plants . . . . .	7
DISTRIBUTION AND CAPACITY OF THE FOREST INDUSTRY . . . . .	8
Sawmill Operations . . . . .	8
Sawmill capacity totals 30.7 million board feet per 8-hour shift . . . . .	8
Class A sawmills have 44.7 percent of region's lumber producing capacity; Eureka area most important . . . . .	11
Class B sawmills have 29.6 percent of region's sawmill capacity; also concentrated in Eureka area . . . . .	12
Class C sawmills concentrated in Portland and Eureka economic areas . . . . .	12
Class D sawmills concentrated in Seattle economic area . . . . .	12
Lumber industry in western Washington smaller but more stable than in western Oregon . . . . .	18
Plywood Industry . . . . .	18
Plywood industry 1966 annual capacity 24.6 million square feet; concentrated in Eugene, Medford, and Corvallis areas . . . . .	18
Integrated veneer and plywood operations concentrated in Eugene economic area . . . . .	24
Veneer operations concentrated in Eugene and Roseburg areas . . . . .	24
Plywood layup capacity concentrated in Corvallis economic area . . . . .	24



Pulp Industry . . . . .	24
Pulp operations concentrated near Columbia River . . . . .	24
Western Washington and western Oregon pulp capacity increases 1.3 million tons in 6 years . . . . .	24
Shake and Shingle Operations . . . . .	28
Shake and shingle operations concentrated in western Washington . . . . .	28
LOG CONSUMPTION BY ECONOMIC AREAS AND TYPE OF INDUSTRY . . . . .	30
Eureka economic area region's largest log market; over 2 billion board feet used in 1966 . . . . .	30
Lumber industry major log user; consumes 58.0 percent of region's supply . . . . .	32
Plywood industry utilizes 30.2 percent of region's timber . . . . .	37
Pulp plants utilize 1,488 million board feet of logs, 10.9 percent of regional total . .	37
Shake and shingle plant log use totals 128 million board feet . . . . .	39
REGIONAL LOG FLOWS . . . . .	40
Log movement in region limited . . . . .	40
Seattle area is region's leading log importer . . . . .	41
Tacoma area largest interarea log exporter . . . . .	43
LANDOWNERSHIP AND TIMBER SUPPLY . . . . .	44
Private lands supplied 55.1 percent of region's log requirements . . . . .	44
National Forests furnished 4,360 million board feet of logs, 31.8 percent of region's total . . . . .	45
Bureau of Land Management lands contribute 8.1 percent of logs used . . . . .	54
Indian lands supplied less than 1 percent of logs consumed in region . . . . .	54
State-owned logs account for 4.2 percent of logs used in region . . . . .	54
SUPPLY SOURCES FOR REGION'S FOREST INDUSTRIES . . . . .	57
Sawmill industry obtains over half its timber supply from private lands . . . . .	57
Federal lands furnish over half of plywood industry's logs . . . . .	58
Pulp plants obtain 74 percent of roundwood from private lands . . . . .	59
Shake and shingle plants rely heavily on private timber . . . . .	59
NATIONAL FOREST LOG MARKETS . . . . .	61
APPENDIX TABLES . . . . .	72

## SUMMARY

---

Increasing demands on the Douglas-fir region's limited timber supply make it important that relationships between landownership classes, the forest industry, and the region's economy be better understood. Insight into the distribution of logs from stump to mill is a necessary first step in this process. In this study, the pattern of timber distribution from each landownership class and to each kind of mill is identified.

This material is presented in a context of economic areas based on commuting and shopping patterns with each area consisting of a county or group of counties. Each economic area's degree of dependency on employment in forest-based industries is identified for the purpose of pointing out the relative value of the timber industry and changing log supply sources to each area.

Ten of the region's 15 functional economic areas are cited as being highly dependent on employment in timber-based industries, with the Roseburg, Coos Bay, and Port Angeles areas being the most dependent. The Seattle area is the only area classified as being slightly dependent on employment in the timber industries.

The Eureka economic area is the region's largest log market, followed by the Eugene, Portland, Seattle and Coos Bay Areas, each consuming over 1 billion board feet of logs. Of the 13.7 billion board feet consumed within the region, the lumber industry used 58 percent, mainly in the Eureka, Portland, Eugene, Seattle and Coos Bay areas; the plywood industry used 30 percent, concentrated in the five areas from Corvallis to Medford; pulp plants consumed 11 percent, with the Seattle area the largest single consumer of pulp logs; and shake and shingle mills used 1 percent, mainly in the Aberdeen area.

Lumber is the region's leading forest industry measured in terms of number of plants and volume of wood used. The majority of the sawmill capacity is concentrated in three areas, Eureka, Eugene, and Portland. This pattern is true for all mill size classes except small mills which are concentrated in the Seattle and Tacoma areas. In general, the lumber industry has been more stable in western Washington but much larger in western Oregon and northwestern California.

Medium-sized sawmills are the heaviest users of Federal timber, and small mills and very large mills rely much more on private sources for their timber supply. The large mills obtain a very high proportion of their timber needs from their own lands; the small operator purchases his timber from other private sources.

The plywood industry is heavily concentrated in southwest Oregon and obtains over 50 percent of its timber needs from Federal lands. Veneer mills in particular use a high proportion of Federal timber, whereas the integrated veneer and plywood operations (producing both veneer and plywood) use private timber to a greater extent. This difference is due to the landowning characteristics of each type of operation.

Pulp plants are heavy users of private timber, most of which comes from company lands. Shake and shingle mills also count heavily on private logs — most of their supply is purchased from other private landowners.

Private logs are the most important source of supply for the entire region's forest industries. However, because of the geographical distribution of forest landownership in the region, private logs are more important to some economic areas and public logs to others. The greatest volume of private logs



was consumed by the Eureka area; but the Longview area, obtaining over 85 percent of its logs from private lands, was most reliant on this source. All but two areas, Roseburg and Medford, received over 40 percent of their timber needs from private lands. In total, 59 percent of the private logs in the region were consumed by the lumber industry, 25 percent by the plywood industry, 15 percent by the pulp industry, and 1 percent by shake and shingle plants.

The National Forest System supplied about a third of the logs used by the region's forest industry in 1966. The largest volume of National Forest logs, 763 million board feet, was consumed in the Eugene area; and it was also the Eugene area, along with the Medford area, that relied most heavily on these logs — both areas obtained just over 45 percent of their supply from this source.

The Willamette is the largest National Forest supplier, furnishing 890.6 million board feet, or 20 percent of total National Forest logs. Most of this Forest's logs go to the Eugene area, and over half of the logs are used by the plywood industry. The Gifford Pinchot and the Umpqua National Forests were the second and third largest suppliers, respectively, of National Forest timber.

Fifty-eight percent of the National Forest logs were used by the region's lumber industry, 37 percent by the plywood industry, 5 percent by pulp plants, and less than 1 percent by shake and shingle operations.

Markets served by the Willamette, Umpqua, Siskiyou, Klamath, and the Olympic National Forests are areas rated as dependent on timber-based employment. These areas have economies where wood, lumber, or pulp products are the primary means of supporting the local population. In other portions of the region, forest industries using National Forest logs are located in areas where the economy is more diversified and not nearly so dependent on wood-based manufacturing. Markets served by the Gifford Pinchot, Mount Hood, and Mount Baker National Forests fit this latter condition. Although in either case a given mill may be largely dependent on National Forest stumpage for its raw material supply, it is in

those areas where National Forest timber supports the major part of the economy that Forest Service policy has its greatest economic impact.

The Bureau of Land Management supplied 1.1 billion board feet of timber in 1966, representing 8 percent of the total timber used. The Roseburg economic area was the largest user of these logs, 241.3 million board feet. The Bureau of Land Management's logs were used by the region's forest industry in the following manner: lumber industry, 54 percent; plywood plants, 45 percent; pulp plants, 1 percent.

The Bureau of Indian Affairs furnished less than 1 percent of the region's total log supply in 1966, with the major markets the Aberdeen and Eureka economic areas. The region's pulp plants used 31 percent of the logs sold by the Bureau of Indian Affairs.

State lands supplied 4.2 percent of the total log supply. The Tacoma area in Washington and the Coos Bay area in Oregon were the heaviest users of State logs, but State logs were most important to the forest industry in the Port Angeles area where 18.7 percent of the logs used were from State lands.

Fifty-two percent of the State logs were consumed by the region's lumber industry, 26 percent by the plywood industry, pulp plants used 20 percent, and about 2 percent were used by shake and shingle operations.

Intra-area log movements were shown to be limited, especially in the more timber-dependent areas. Nine of the region's 15 economic areas obtained at least 70 percent of their timber supplies from within their respective boundaries, and only one of the timber-dependent areas, Longview, obtained less than 60 percent of its log supplies from within its own borders. The Seattle area was the region's leading importer of logs, 632.8 million board feet, and Tacoma was the leading inter-area exporter, 599.0 million board feet.

Forest resources have played a major role in the region's past economic development and will continue to do so. Although timber is equally important to all the region's mills, the importance of timber to areas in the region varies according to each area's degree of dependency on timber-based employment.



# INTRODUCTION

---

## Objectives

Determining log flow patterns in the Douglas-fir region<sup>1</sup> is by necessity an early step in discovering relationships between timber landowners, the forest industry, and the region's economy. With this in mind, we have provided information on regional log flows for one point in time, 1966.

The distribution of plants and of plant capacities in 1966 is determined, and markets for logs are discussed in terms of specified areas in the region and plant types.<sup>2</sup> Where and what kinds of plants form the region's log markets and who is directly dependent on the various forest landownership classes for logs are answered in this report. All of these questions are considered within a framework of the region's dependency upon timber industry employment.

A consequence of the growing demand for timber and the rise in stumpage prices has been increasing pressure to intensify management on all forest lands. Land managing agencies are well aware that healthy timber industry and dependent communities are keys to the region's economic well-being. Data presented here on timber flows and log utilization patterns will provide decisionmakers with further insights into this complex situation. Forest managers will be in a better position to judge their sphere of influence on the forest industry and the region's economy; county

and local officials will be better able to determine the relative strength of their forest industry; and local and regional planners can more adequately identify the mobility of the region's timber resource.

Economic development among communities within the 42-county Douglas-fir region has occurred at an uneven pace, and it must be recognized that realization of economic stability in a community is much more complex than that which is implied by sustained-yield forestry. Insights based on community growth and development are needed by private and public resource managers in order to cope with the emerging local problems associated with geographic shifts in timber-dependent industry and available timber supply. For this reason, the 42-county Douglas-fir region was divided on a geographical basis into 15 functional economic areas (fig. 1).

The 15 areas are essentially the commuting and shopping zones delineating local labor markets and service areas and are people-oriented rather than resource-oriented units. Each area represents a relatively self-contained unit with respect to commuting and shopping.<sup>3</sup>

These areas were derived from a special study<sup>4</sup> that was part of the "Douglas-fir Sup-

---

<sup>1</sup>The Douglas-fir region is defined here as the 19 counties of western Washington, the 19 counties of western Oregon lying west of the Cascade Crest, and Del Norte, Siskiyou, Humboldt, and Trinity Counties in northern California.

<sup>2</sup>Log market throughout this paper is defined as the point of log utilization.

---

<sup>3</sup>For discussion see: Fox, Karl A., and Kumar, T. Krishna. *Delineating functional economic areas*. In *Research and education for regional and area development*. 287 pp., illus. Ames: Iowa State Univ. Press. 1967.

<sup>4</sup>Maki, Wilbur R., Schallau, Con H., and Beuter, John H. *Importance of timber-based employment to the economic base of the Douglas-fir region of Oregon, Washington, and northern California*. Pacific Northwest Forest & Range Exp. Sta. USDA Forest Serv. Res. Note PNW-76, 6 pp., illus. 1968.



Figure 1. — Economic areas and growth centers in Douglas-fir region of Washington, Oregon, and California.



ply Study’’<sup>5</sup> and were used in determining the dependency of the region on the forest products industry.

In each economic area, the largest city is identified as the growth center since it is usually the most rapidly growing part of the area. Each growth center and the communities in its labor and commuting area represent an economic area characterized by a high degree of economic interdependence.

## Importance of Timber to Economic Areas

In order to assess the importance of log flows within the region and to point out the relative value of the timber industry and the changing log supply sources to each of the economic areas, each area’s dependency on timber was examined.

As part of the special study by Maki et al. (see footnote 4), the degree of economic dependency on timber industries was estimated for each of the region’s 15 subareas. Dependency was measured in terms of the percent of economic base employment within an area accounted for by timber-oriented industries. An area’s economic base employment is the employment producing goods and services for markets outside the area. In contrast, service or residentiary employment produces for local consumption. Usually, most manufacturing employment falls into the economic base classification, but employment in local service industries, e.g., barbershops, shoe repair shops, drugstores, is geared to local needs.

The excess employment technique was used to identify that portion of the employment in each area which was economic base employment. This approach accepts the national distribution of employment as a norm. For any sector of an area’s economy, an industry with employment in excess of this norm is considered to be producing for markets outside the area and is thus part of that area’s economic base.

<sup>5</sup> USDA Forest Service. *Douglas-fir supply study. Regions 5 and 6 and the Pacific Northwest Forest & Range Exp. Sta. 53 pp., illus. 1969.*

Each area’s *timber dependency indicator* was found by determining the percent of total excess or economic base employment accounted for by excess employment in wood products industries. Percentages for the 15 economic areas fell into three distinct groups. Ten areas were rated as highly timber dependent, four areas moderately dependent, and one area, Seattle, was classed as slightly dependent.<sup>6</sup>

<u>Dependency and economic area<sup>1</sup></u>	<u>Percentage of 1960 excess employment dependent on timber-based employment</u>
Slight:	
Seattle	6.2
Moderate:	
Portland	23.8
Salem	29.3
Bellingham	30.4
Tacoma	32.5
High:	
Astoria	63.1
Medford	70.0
Corvallis	74.3
Eugene	76.6
Longview	81.5
Aberdeen	88.1
Eureka	89.6
Port Angeles	90.5
Coos Bay	91.6
Roseburg	99.4
Douglas-fir region	44.8

<sup>1</sup> *Economic areas are identified by the names of their respective growth centers.*

Forest-based activities are not the sole economic support of communities in the region, but for many communities the lumber and wood products and paper and allied products industries are the primary means of support-

<sup>6</sup> *In the previously mentioned study by Maki et al., the Eureka economic area consisted of Del Norte, Humboldt, and Siskiyou Counties. Trinity County has been added here, and it has been assumed the area’s timber dependency would not significantly change.*

ing the local population.<sup>7</sup> For the region as a whole, approximately 45 percent of the economic base employment is in timber-dependent industries. However, the total importance of the forest industries does not end with the manufacture of wood-based products. Firms engaged in transportation, heavy manufacturing, and provision of other services as a result of forest industry activity also contribute to dollar flows, employment, and economic growth in the region.

The data obtained in this study have been presented in a context of functional economic areas — areas for which the timber dependency indicator has been determined. The data will allow evaluation of log flows in light of each area's dependency on timber. Relating the log flows in these people-oriented units to each unit's degree of dependency on timber-based employment may shed some light on the emerging local and regional problems associated with shifting timber-dependent economic activity and changing available timber supplies.

The importance of timber in an area's economic base provides a critical link in explaining the impacts of alternative forest resource management practices on an area. Each area's comparative advantage in the region and in national markets, as shown by the area's economic base, is a determinant of the area's prosperity and economic well-being. Armed with the knowledge of each area's dependency on the forest industries, each resource manager can judge how his management policies contribute to an area's competitive position in regional, national, and international markets.

Although counties have little relationship to the dynamic forces which influence regional economic activity, they do offer the most flexible unit of data presentation. For this

reason, all data in appendix tables 13-27 are tabulated and presented by counties.

## Economic Setting in 1966

The condition of the industry at the time of the study must be known in order to place the results in the proper perspective. In the first part of 1966, the lumber and plywood industries had a high rate of production, continuing from 1965, and the outlook for the remaining part of the year was good. Orders were generally heavy, and prices were moving upward. However, by mid-April, lumber and plywood markets began to weaken, orders had started to decline, and prices were beginning to fluctuate. In May, plywood production began a sharp decline; and though lumber's decline was more gradual, when housing starts hit a 20-year low in October, gloom settled over the wood products industry. Some mills shut down temporarily, and a few closed permanently. The number of mills and their reported log consumption for 1966 may reflect the economic setting. Plants idled by the prevailing economic conditions at that time are not included in the report.

## Collection of Data

Information on domestic consumption of logs by type of user from each landownership class was obtained through an industrywide canvass. A questionnaire was sent to each timber-using plant in the 38 western counties of Oregon and Washington and the four northwestern counties of California. Each plant was asked to report mill capacity, volume of logs used, and source of logs by landownership class and county of origin for the year 1966. Nonrespondents were contacted by telephone, and the requested information was obtained at that time or through a second questionnaire.

In this study, a plant is taken as the basic unit. Some firms may consist of many plants, in which case all the firm's plants within the region were contacted. Data from the following sources were used in compiling the list of plant locations: "Directory of the Forest

---

<sup>7</sup>The lumber and wood products industry includes logging, lumber, plywood, poles, piling, and miscellaneous wood products (excludes furniture). The paper and allied products industry includes pulp, paper, paperboard, and building board products.



Products Industry," "Lockwood's Directory,"<sup>8</sup> the California Department of Employment, Western Wood Products Association, and the Employment Security Department of the State of Washington.

## Industry Coverage

In this study, forest industry firms in the Douglas-fir region operating in 1966 were contacted: 397 sawmills, 59 veneer plants, 99 integrated veneer and plywood plants (producing both veneer and plywood), 32 plywood layup plants, 39 pulp plants, and 49 shake and shingle mills. These firms represented a complete inventory of all active firms except as noted below. (The region's pole and piling firms were not included in the study.)

### Sawmills

There were 15 sawmills not using roundwood and therefore not included in the study. These mills, operating mainly on peeler cores, had a total capacity of 743,000 board feet per 8-hour shift. Most of these mills were located in Oregon.

Although an attempt was made to contact all the region's sawmills, 169 of the listed mills did not respond or could not be found. Information available from other sources for 83 of these 169 nonreporting mills showed a total listed daily capacity of 2,828,000 board feet, or about 34,000 board feet per day per mill. The nonreporting mills were distributed as follows.

Mill location	Total number	Data available from other source	
		Number	Capacity <sup>1</sup>
California	14	9	624
Oregon	73	37	1,324
Washington	<u>82</u>	<u>37</u>	<u>880</u>
Total	169	83	2,828

<sup>1</sup>Thousand board feet per 8-hour day.

Most of these nonreporting sawmills were assumed to be in the class, under 40,000 board feet per 8-hour shift. The low amount of investment needed to start a small sawmill which could bid on public timber sales or purchase logs on the open market meant the number of these small mills producing at any one time depended on the current lumber markets. In view of the conditions existing in the region's wood economy in 1966, many of these mills may have been inoperative at that time.

### Plywood plants

There were three known integrated veneer and plywood operations (plants producing both veneer and plywood) not covered by this study. These had a total capacity of 349 million square feet, 3/8-inch basis, annually. Two of these plants operated only intermittently during 1966.

### Shake and shingle plants

All listed shake and shingle operations were mailed a questionnaire, but due to the large number of these operations, only a few of the nonrespondents were contacted by telephone. Many of the shake and shingle operations tend to be very small and are inconsequential so far as volume of roundwood and mill capacity goes. The total number of listed shake and shingle operations, the number responding, and their capacities are shown for western Washington by county in appendix table 15.

<sup>8</sup>Miller Freeman Publications. *Directory of the forest products industry*. Portland, Oreg., p. 563, 1967, and Lockwood Trade Journal Co., Inc. *Lockwood's directory of the paper and allied trades*. New York, p. 1683, 1966.

# DISTRIBUTION AND CAPACITY OF THE FOREST INDUSTRY

The region's forest industry has developed in a geographically uneven pattern. The larger sawmills and veneer and plywood plants are concentrated either near areas where old growth is available, as in the case of newer mills, or, for many of the older mills, near the population centers which used to have nearby old growth. Small sawmills are widely dispersed throughout the region. Pulp plants are located where raw material and water are most accessible, and the shake and shingle industry is found along the Washington coast because of the available cedar. In the Douglas-fir region, the lumber industry is still the largest of the three primary forest products industries, i.e., lumber, plywood, and pulp. The number of lumber producing plants far exceeds the number of plywood and pulp plants

(table 1), and the volume of logs used by the lumber industry measures over half (58.0 percent) of all logs consumed in the region.

## Sawmill Operations

Sawmill capacity totals 30.7 million board feet per 8-hour shift

Sawmills in the Douglas-fir region reported total capacity per 8-hour shift to be 30.7 million board feet (table 2). The Eureka economic area, which is the center of the large redwood lumber industry, had the greatest number of plants, 61, and the largest capacity, 6,565,000 board feet per shift, or 21.4 percent of total regional sawmill capacity (fig. 2). The Portland area was second with 56 saw-

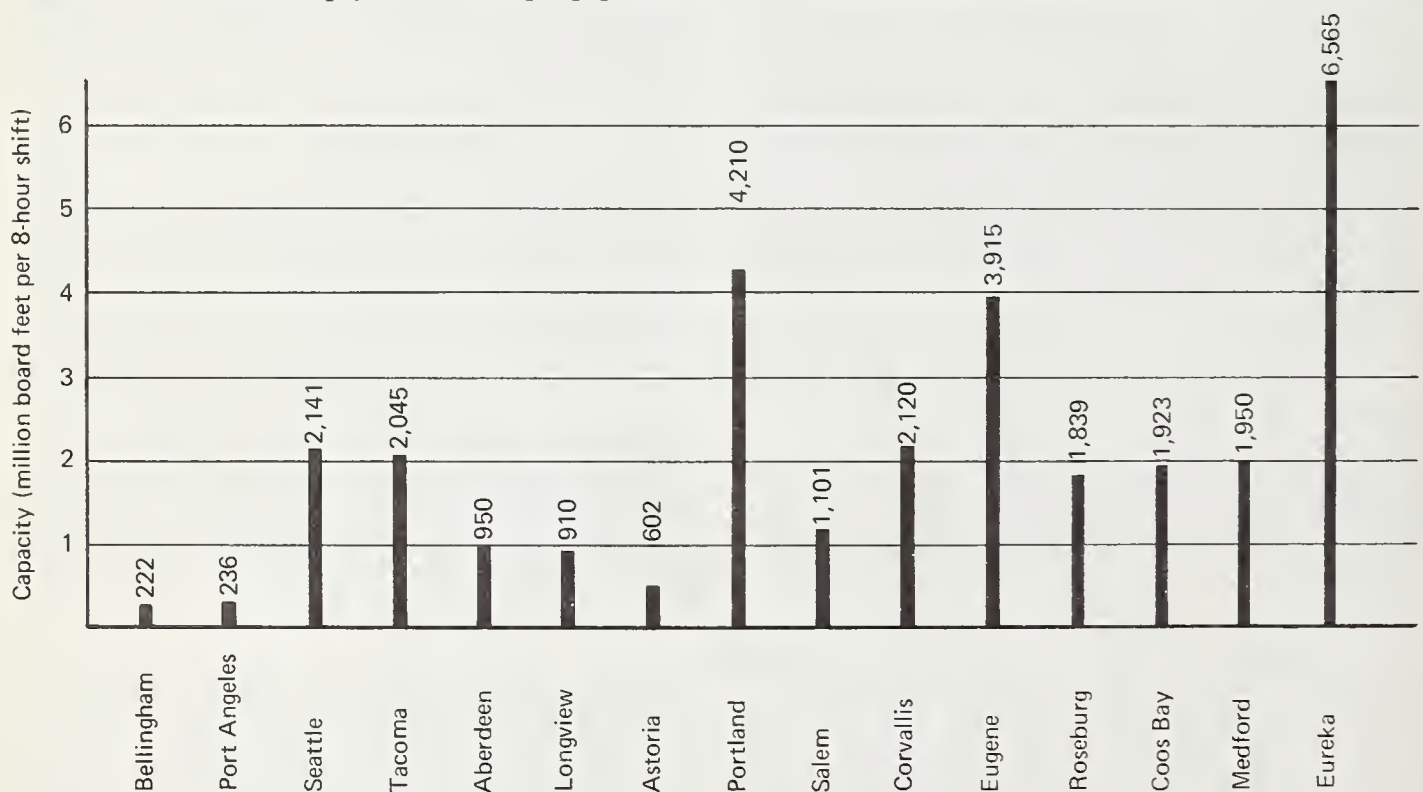


Figure 2. — Total sawmill capacity by economic area, Douglas-fir region, 1966.

Table 1. — Number of active wood product plants by type of plant and economic area, Douglas-fir region, 1966<sup>1</sup>

Economic areas by district	Shake and shingle	Sawmills <sup>2</sup>					Veneer	Veneer and plywood <sup>3</sup>	Plywood	Pulp	Total
		D	C	B	A	Total					
Puget Sound:											
Bellingham	8	9	2	--	--	11	--	2	--	2	23
Port Angeles	7	11	--	--	1	12	1	1	--	4	25
Seattle	3	27	4	4	4	39	1	4	1	3	51
Tacoma	7	25	10	4	4	43	6	6	5	4	71
District total	25	72	16	8	9	105	8	13	6	13	170
Columbia River:											
Aberdeen	15	3	2	1	4	10	--	6	1	2	34
Longview	4	5	2	1	2	10	--	2	--	3	19
Astoria	1	6	1	3	1	11	--	3	--	--	15
Portland	2	18	17	10	11	56	7	9	3	10	87
Salem	--	3	4	7	1	15	2	5	1	1	24
Corvallis	--	8	9	5	6	28	6	8	6	4	52
Eugene	1	5	15	11	10	41	13	18	5	1	79
District total	23	48	50	38	35	171	28	51	16	21	310
Southwest Oregon:											
Roseburg	--	5	7	10	3	25	9	7	2	1	44
Coos Bay	--	3	3	5	5	16	4	12	--	2	34
Medford	--	3	2	9	5	19	2	6	8	--	35
District total	--	11	12	24	13	60	15	25	10	3	113
Northwest California:											
Eureka	1	1	17	26	17	61	8	10	--	2	82
Total, Douglas-fir region	49	132	95	96	74	397	59	99	32	39	675

<sup>1</sup> Includes only those plants that responded to the 1966 forest industry survey.

<sup>2</sup> Sawmills denoted as follows: class A mills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

<sup>3</sup> Integrated operations producing both veneer and plywood.



Table 2. — Forest industry plant capacities by type of plant and economic area, Douglas-fir region, 1966<sup>1</sup>

Economic areas by district	Shake and shingle	Sawmills <sup>2</sup>					Veneer, 1/8-inch	Veneer and plywood, 3/8-inch <sup>3</sup>	Plywood, 3/8-inch	Pulp
		D	C	B	A	Total				
-----Thousand bd. ft. per 8-hour shift----- Thousand sq. ft. per 8-hour shift Tons per 24 hours										
Puget Sound:										
Bellingham	46	117	105	--	--	222	--	275	--	640
Port Angeles	125	111	--	--	125	236	100	200	--	1,552
Seattle	30	386	255	380	1,120	2,141	57	510	60	1,435
Tacoma	57	304	585	406	750	2,045	763	749	500	1,470
District total	258	918	945	786	1,995	4,644	920	1,734	560	5,097
Columbia River:										
Aberdeen	297	70	110	90	680	950	--	434	150	885
Longview	31	125	110	100	575	910	--	386	--	3,111
Astoria	9	89	50	303	160	602	--	585	--	--
Portland	12	350	1,141	935	1,784	4,210	593	2,230	101	3,436
Salem	--	46	249	661	145	1,101	155	812	272	230
Corvallis	--	178	512	470	960	2,120	863	1,071	2,238	1,549
Eugene	15	130	840	1,005	1,940	3,915	1,712	3,381	872	1,150
District total	364	988	3,012	3,564	6,244	13,808	3,323	8,899	3,633	10,361
Southwest Oregon:										
Roseburg	--	110	413	921	395	1,839	1,370	1,254	275	500
Coos Bay	--	29	155	505	1,234	1,923	850	2,593	--	325
Medford	--	65	115	895	875	1,950	700	1,891	1,962	--
District total	--	204	683	2,321	2,504	5,712	2,920	5,738	2,237	825
Northwest California:										
Eureka	11	10	1,127	2,418	3,010	6,565	1,111	1,797	--	1,000
Total, Douglas-fir region	633	2,120	5,767	9,089	13,753	30,729	8,274	18,168	6,430	17,283

<sup>1</sup> Includes only those plants that responded to the 1966 forest industry survey.

<sup>2</sup> Sawmills denoted as follows: class A mills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

<sup>3</sup> Integrated operations producing both veneer and plywood.



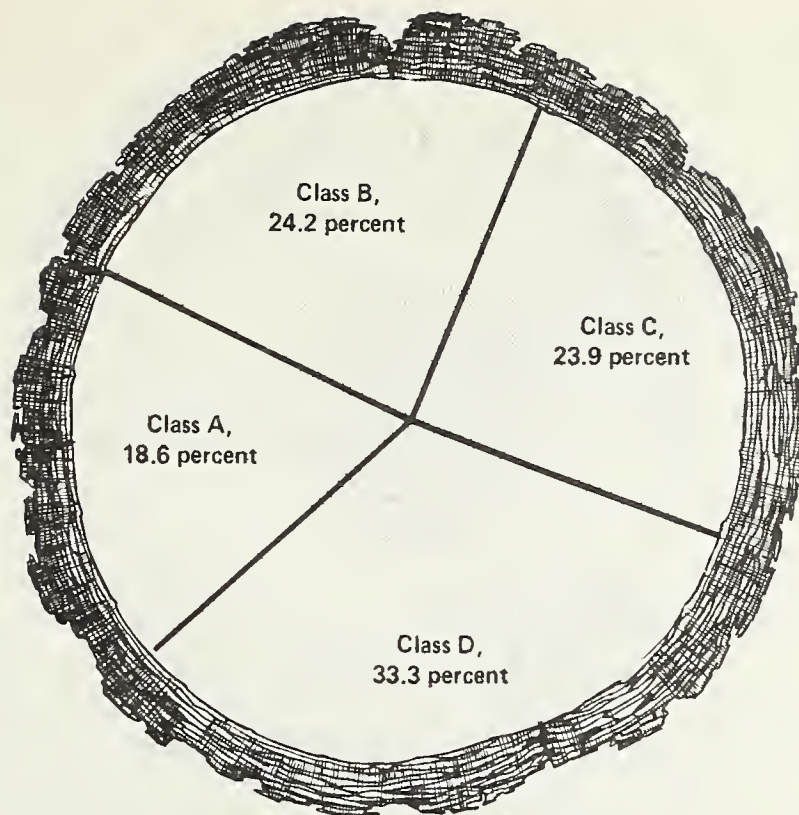


Figure 3. — Percent of Douglas-fir region sawmills in each mill size class, 1966. Class A sawmills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

mills and a capacity of 4,210,000 board feet per shift. Bellingham had the smallest lumber industry with only 11 sawmills and a capacity of 222,000 board feet per shift.

Technological advancements and a continually changing market have made it possible for sawmills to operate without relying on the large, old-growth Douglas-fir which was once the backbone of the lumber industry. Today's lumber industry varies in size from plants producing a few thousand board feet per shift to mills producing in excess of 120,000 board feet per shift.

Sawmills were grouped into four classes, according to the lumber production capacity for a single 8-hour shift, as follows:

Class	Capacity, board feet per 8-hour shift
A	120,000+
B	80,000-119,000
C	40,000-79,000
D	Less than 40,000

A total of 397 sawmills were contacted in the region. Of this total, 33 percent were class D plants, 24 percent class C, 24 percent class B, and 19 percent class A (fig. 3).

Class A sawmills have 44.7 percent of region's lumber producing capacity; Eureka area most important

There were 74 large sawmills (120,000 board feet or more per 8-hour shift) in the region, providing 44.7 percent of the region's total sawmill capacity (figs. 4 and 5). The largest concentration of these mills was in the Eureka area where there were 17 plants with a total capacity of 3,010,000 board feet per shift, 21.9 percent of total large sawmill capacity (fig. 6). Eureka's class A sawmill capacity was more than half again as large as the capacity of large sawmills in any other area. The Eugene economic area was second in importance, with 1,940,000 board feet per shift.

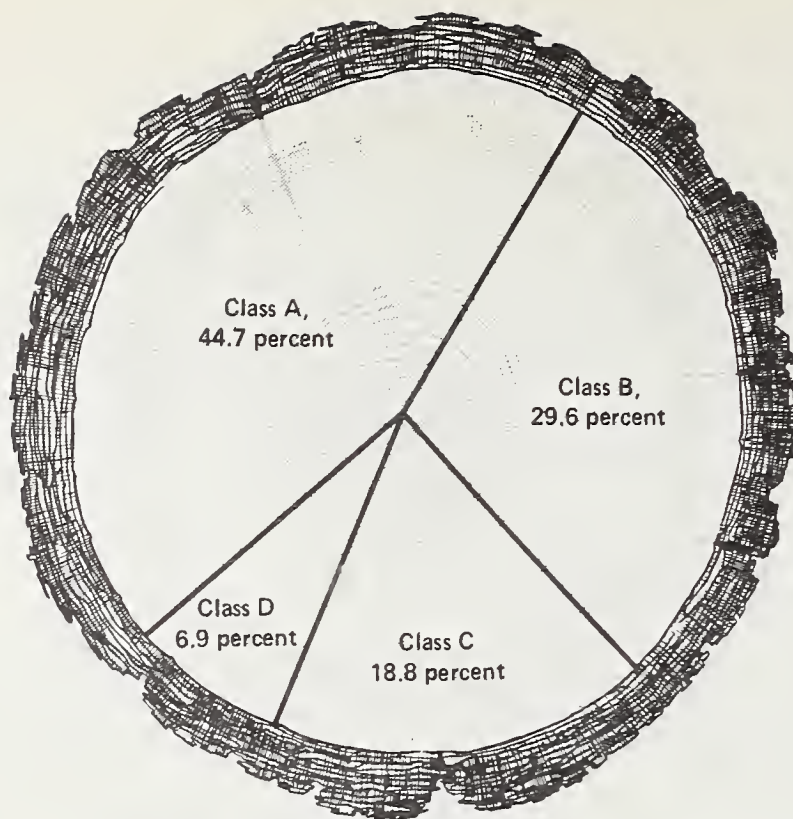


Figure 4. — Percent of Douglas-fir region sawmill capacity in each mill size class, 1966. Class A sawmills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-179,000; D = less than 40,000.

**Class B sawmills have 29.6 percent of region's sawmill capacity; also concentrated in Eureka area**

Class B sawmills, 80,000-119,000 board feet capacity per 8-hour shift, totaled 96 mills in the region in 1966 and 29.6 percent of the region's total lumber manufacturing capacity. The Eureka economic area, with its concentration of redwood sawmills, had 26 class B mills with a capacity of 2,418,000 board feet per 8-hour shift (fig. 7). This was 26.6 percent of the total regional "medium large" sawmill capacity and more than double the class B capacity of any other economic area (fig. 8). The Eugene economic area was second in capacity with 1,005,000 board feet.

**Class C sawmills concentrated in Portland and Eureka economic areas**

Class C, mills with a capacity of 40,000-79,000 board feet per shift, was made up of 95 sawmills and represented 18.8 percent of the region's total sawmill capacity. The largest number of these mills was located

in the Portland and Eureka economic areas, both with 17 plants (fig. 9). The Portland economic area had a slightly higher capacity, 1,141,000 board feet per 8-hour shift versus 1,127,000 board feet for the Eureka area (fig. 10). Portland had 19.8 percent of the region's total for this class.

**Class D sawmills concentrated in Seattle economic area**

There were 132 small mills in class D, representing 6.9 percent of total sawmill capacity in the region (fig. 11). These small mills were concentrated in three areas that are among the oldest major lumber producing areas in the West. The Seattle and Tacoma areas combined had 52 mills representing 32 percent of the small mill capacity, and the Portland area had 18 small mills (fig. 12).

Twenty mills which used hardwoods only have been included in the above figures. These mills were all in class D — under 40,000 board feet per 8-hour shift — and had a total capacity of 279,000 board feet per shift. Total log volume utilized by these operations

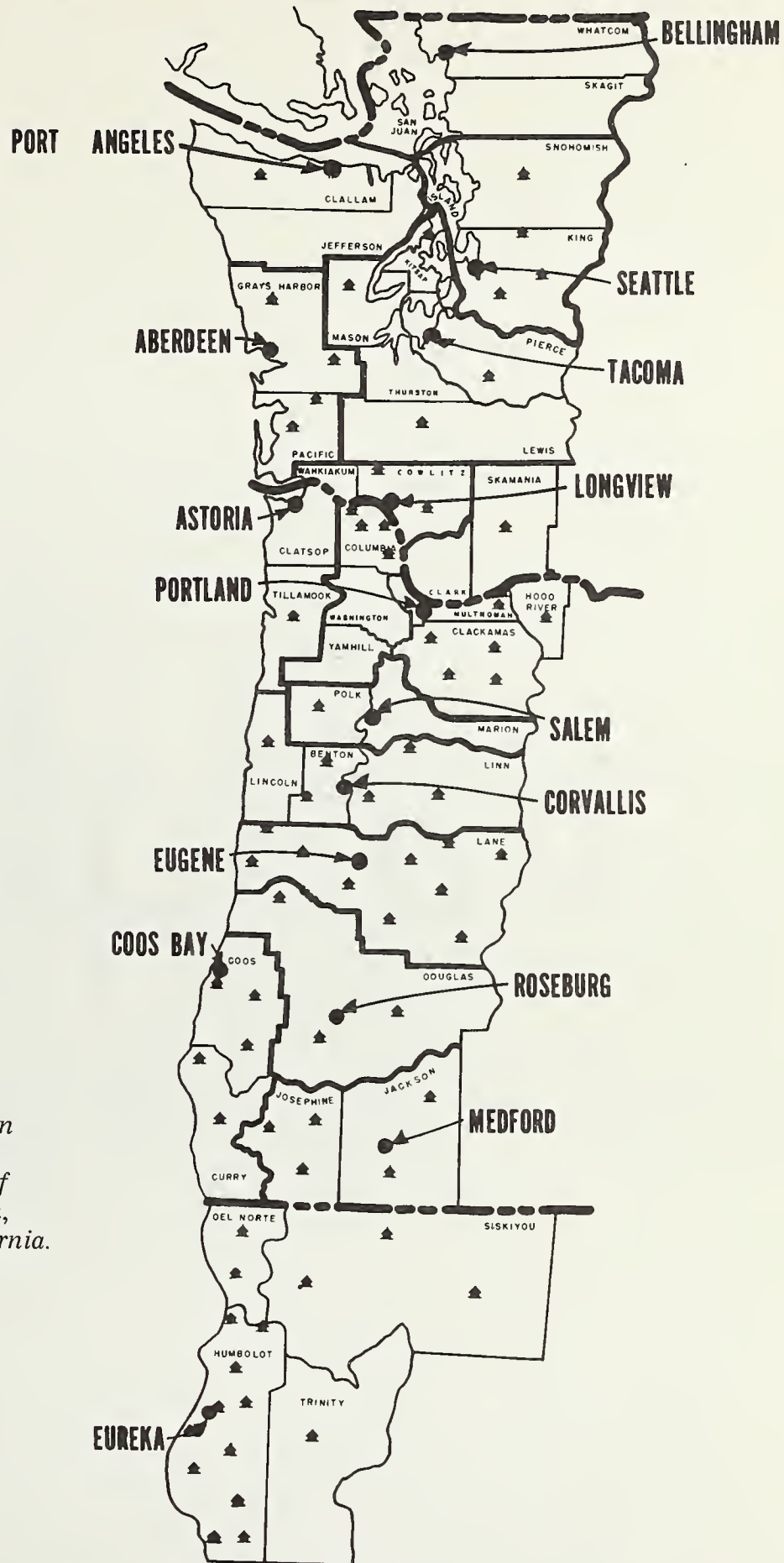


Figure 5. — Location of class A sawmills, Douglas-fir region of Washington, Oregon, and northern California.



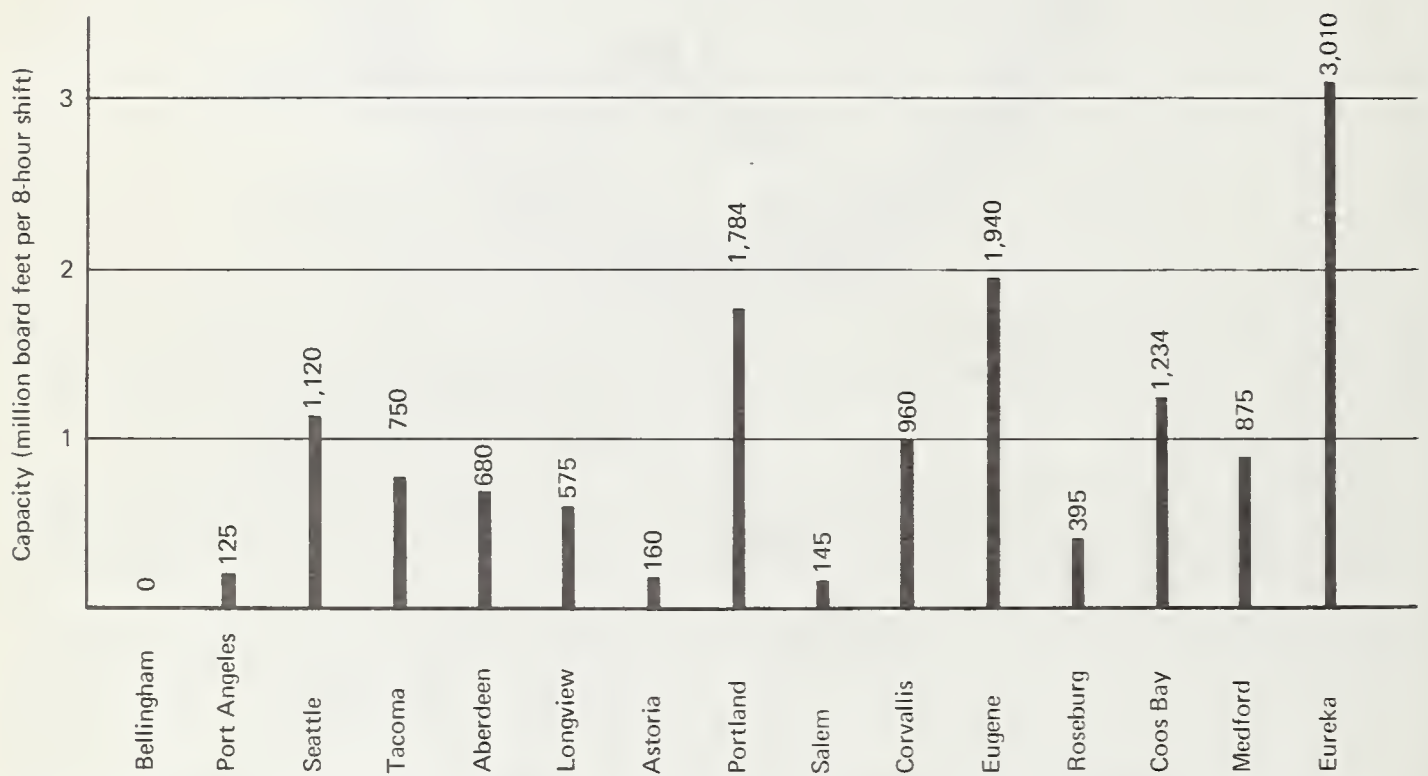


Figure 6. — Capacity of class A sawmills by economic area, Douglas-fir region, 1966. Class A sawmills = 120,000+ board feet capacity per 8-hour shift.



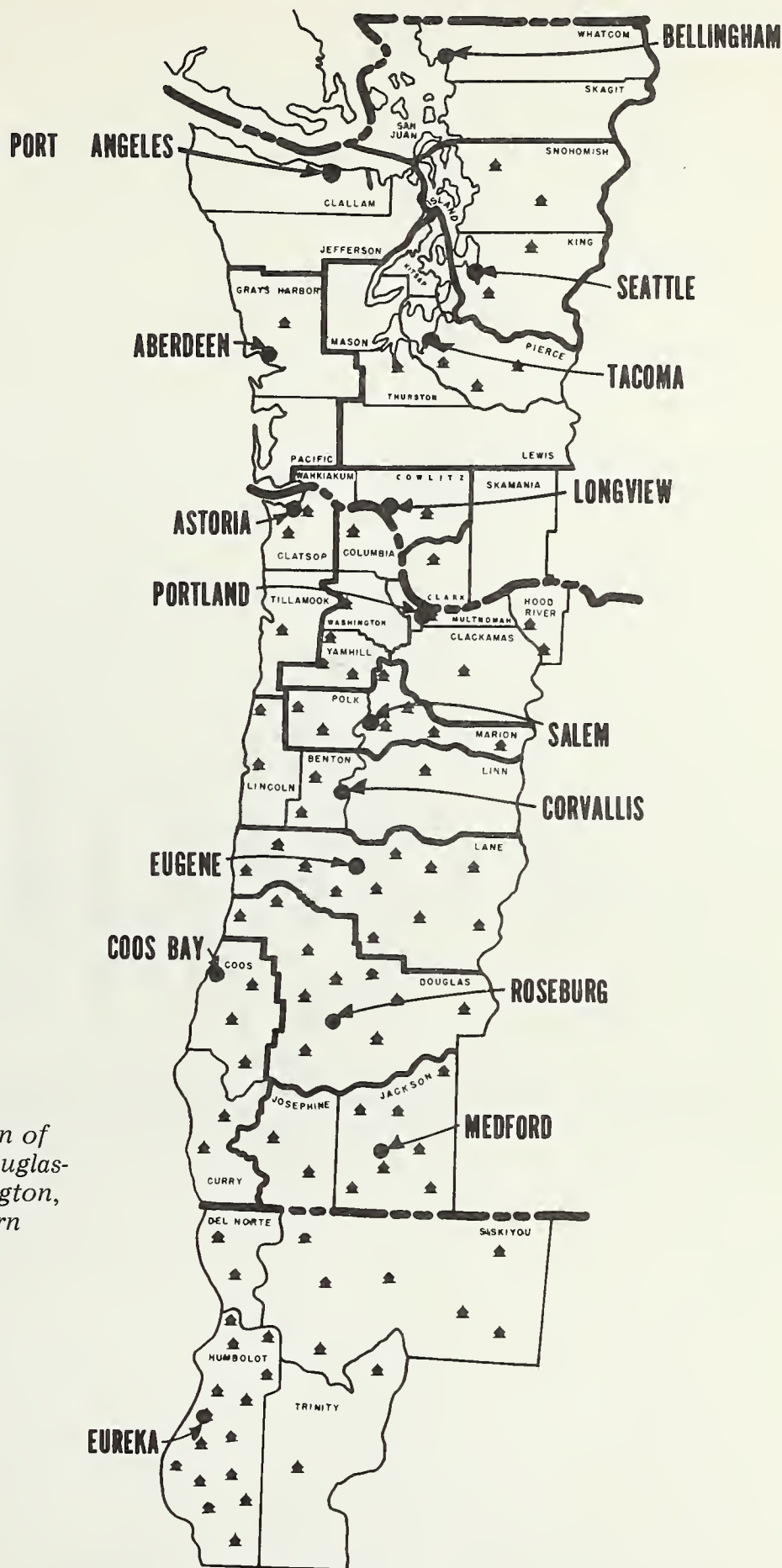


Figure 7. — Location of class B sawmills, Douglas-fir region of Washington, Oregon, and northern California.

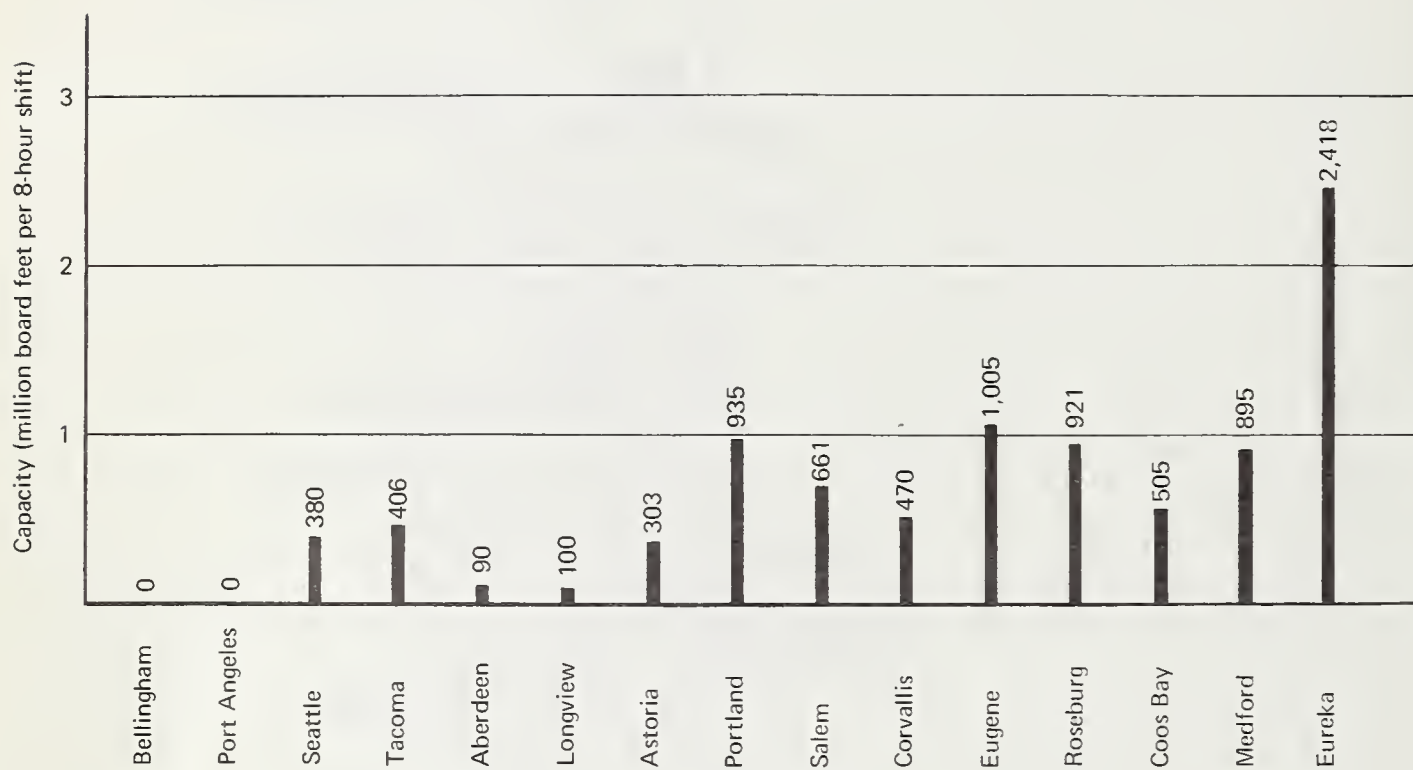


Figure 8. — Capacity of class B sawmills by economic area, Douglas-fir region, 1966. Class B sawmills = 80,000-119,000 board feet capacity per 8-hour shift.

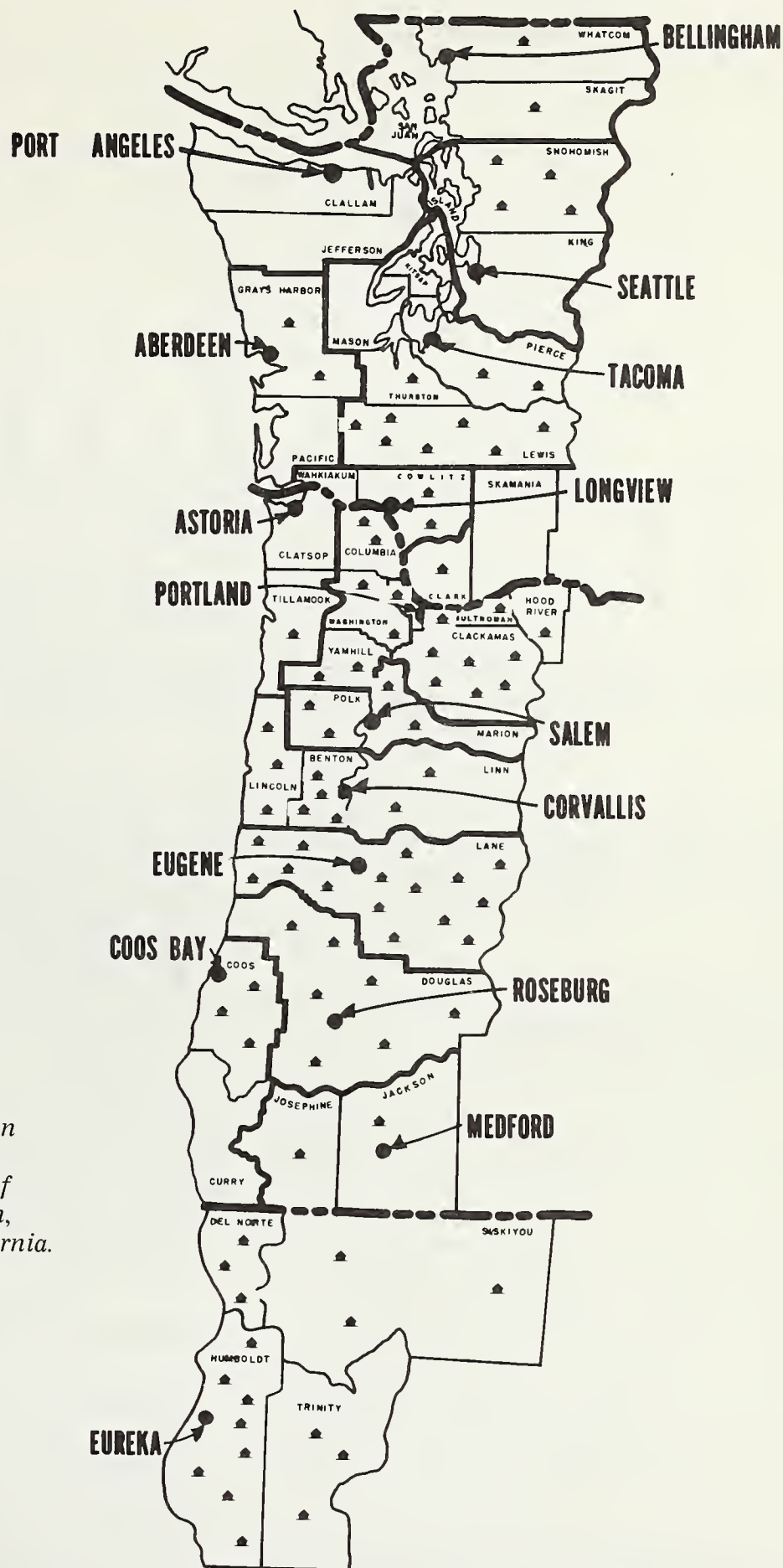


Figure 9. — Location of class C sawmills, Douglas-fir region of Washington, Oregon, and northern California.

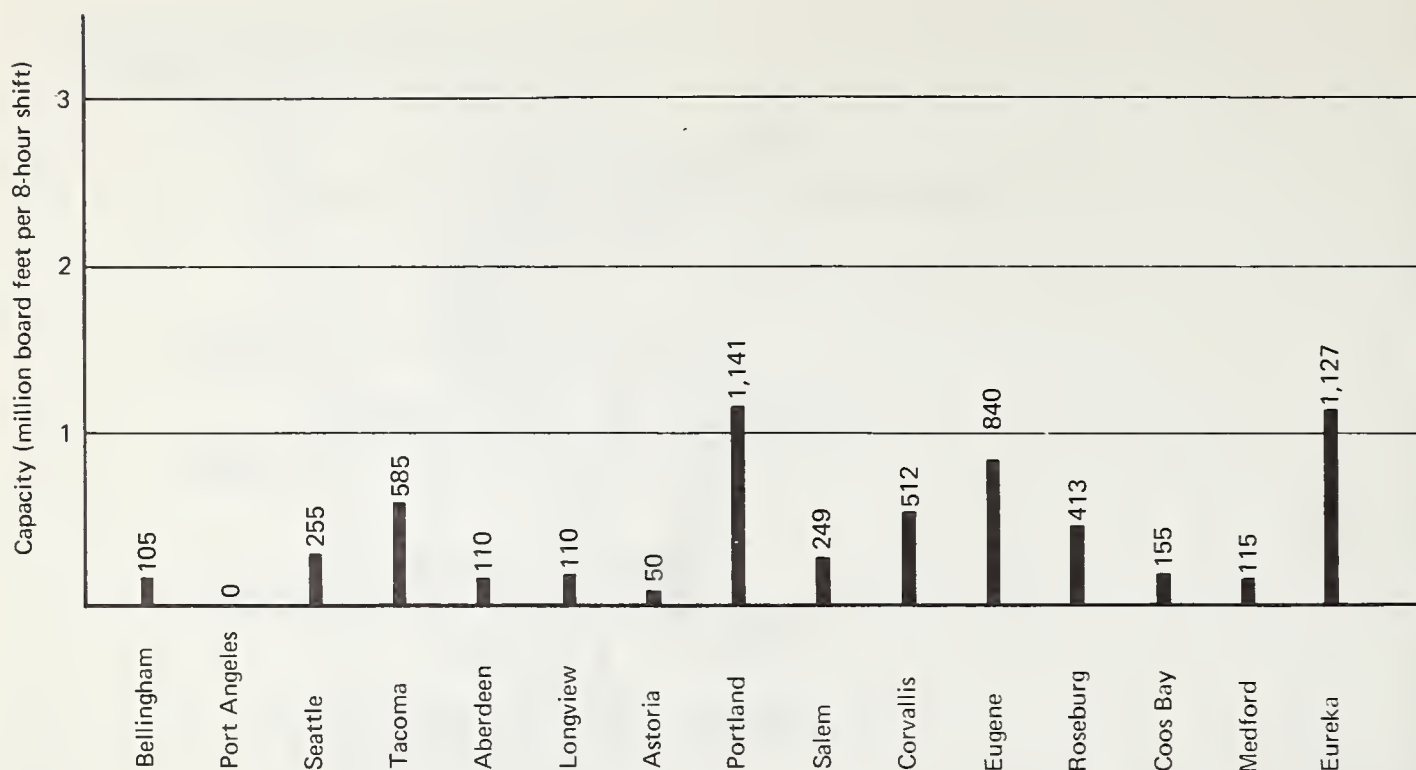


Figure 10. — Capacity of class C sawmills by economic area, Douglas-fir region, 1966. Class C sawmills = 40,000-79,000 board feet capacity per 8-hour shift.

was 54.7 million board feet, of which 51.9 million board feet was purchased from private lands. The Longview economic area in Washington had the largest hardwood mill capacity.

#### Lumber industry in western Washington smaller but more stable than in western Oregon

In general, the average sawmill in western Oregon is much larger than in western Washington. About two-thirds of the class D mills were located in Washington, with Oregon leading in numbers of the other three classes of mills. Another study showed that, from 1947 to 1960, lumber mills in Oregon outstripped the growth in size of similar establishments in Washington and California.<sup>9</sup> This same study pointed out that the mortality rate has grown steadily higher and the birth rate lower for smaller companies as compared

with large companies in the region, and, in general, lumber companies had declined in number but grown in size. Although the data in this study were based on entire companies rather than on individual plants, they are useful in examining trends in number of plants because the number and size of plants bear a high correlation to the number and size of companies.

Data shown in table 3 compare the lumber industry in western Washington with that in western Oregon. The trend from 1950 to 1966 indicates a more stable situation in Washington and an increase in the size of sawmills in Oregon.

## Plywood Industry

Plywood industry 1966 annual capacity 24.6 million square feet; concentrated in Eugene, Medford, and Corvallis areas

The plywood industry consists of three major components: veneer operations, inte-

<sup>9</sup>Ho, Franklin Y. H. *Small lumber companies in western Oregon*. University of Portland, 119 pp., illus., 1963.



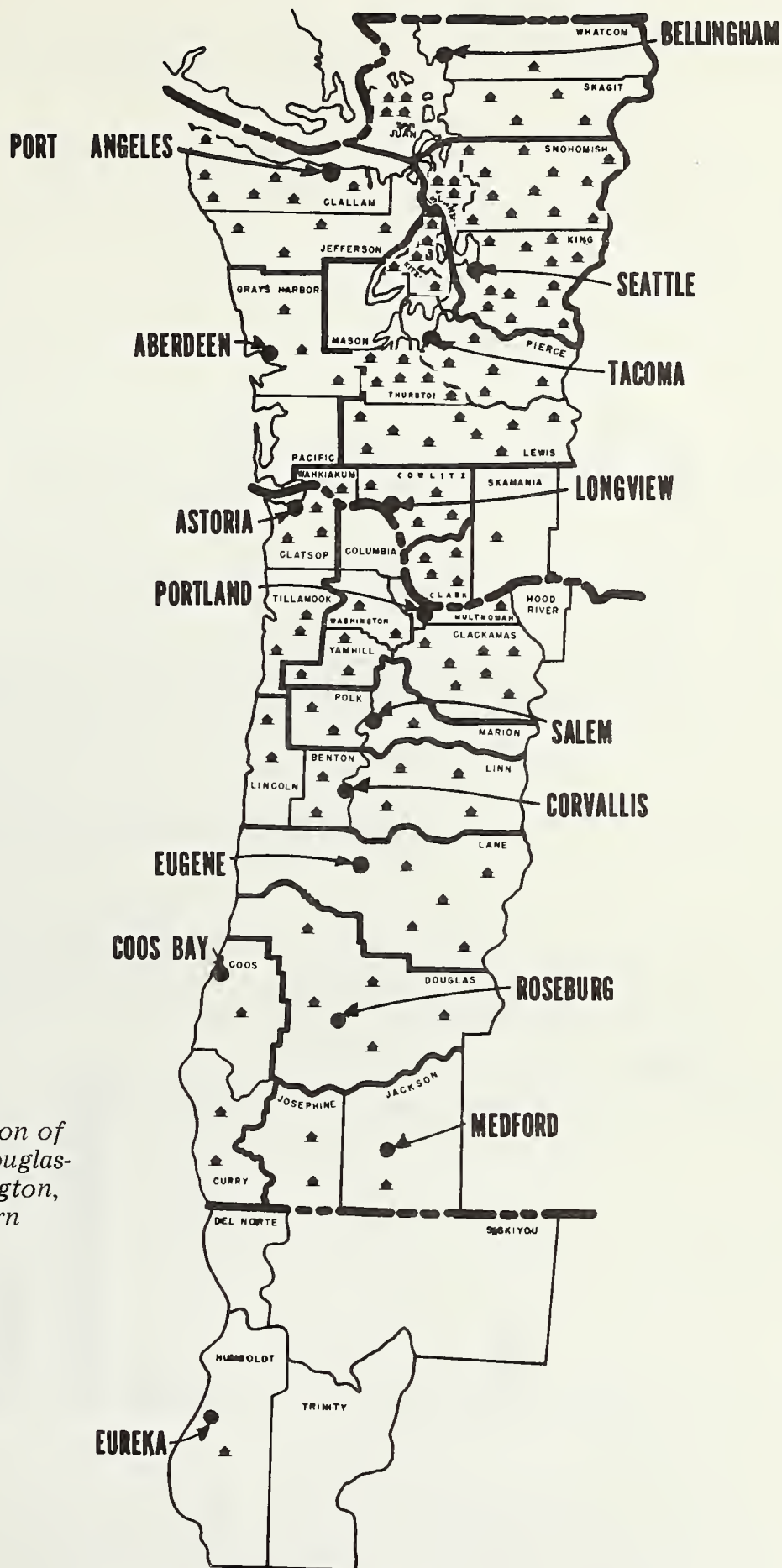


Figure 11. — Location of class D sawmills, Douglas-fir region of Washington, Oregon, and northern California.

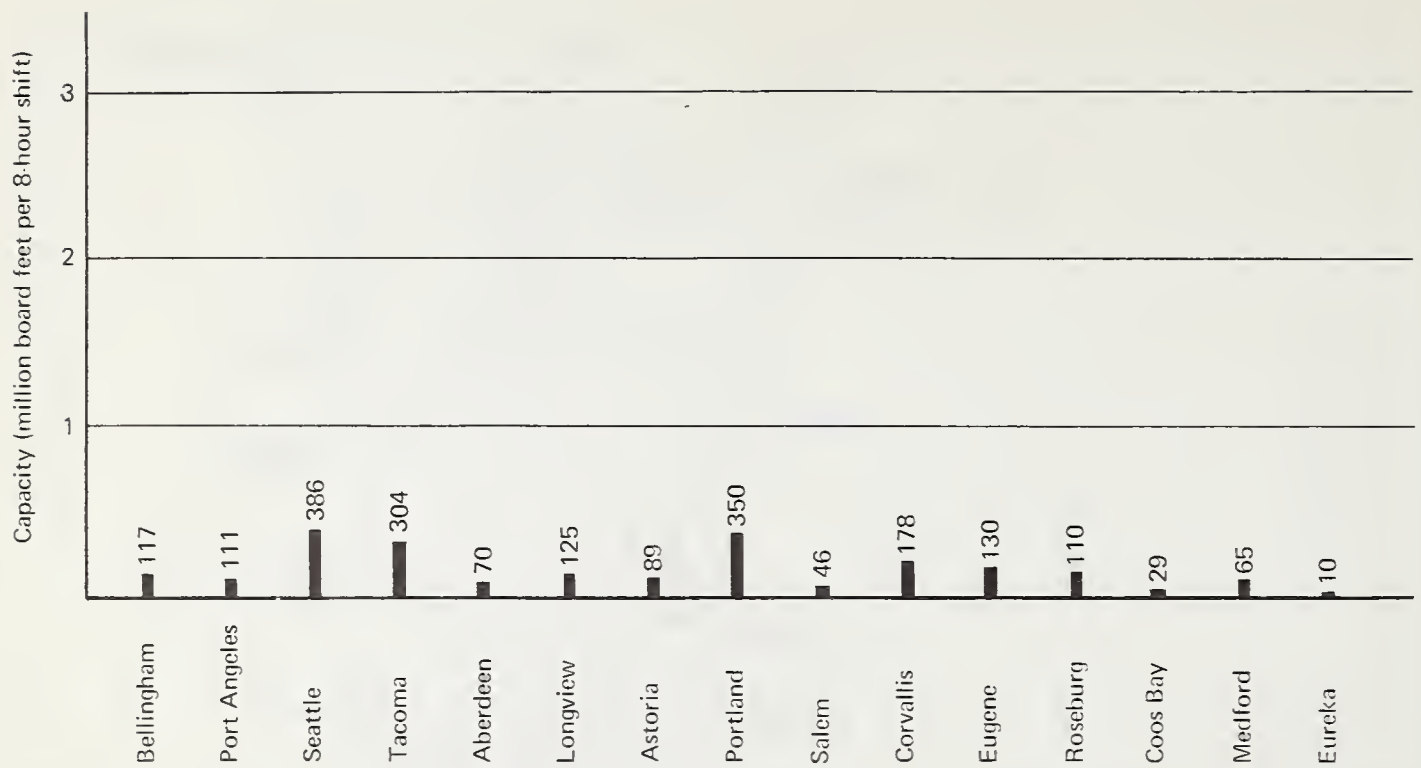


Figure 12. — Capacity of class D sawmills by economic area, Douglas-fir region, 1966. Class D sawmills = less than 40,000 board feet capacity per 8-hour shift.

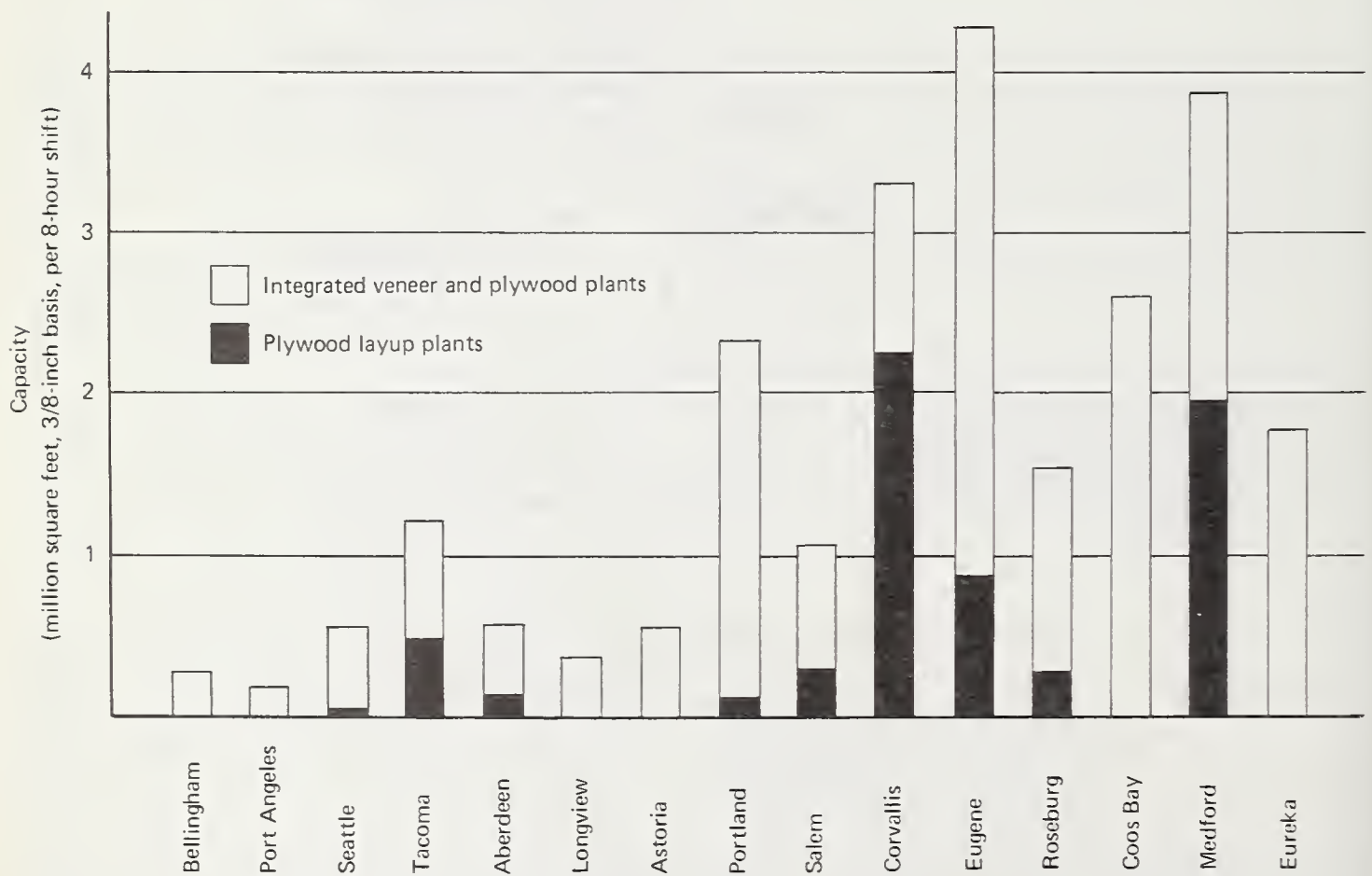


Figure 13. — Capacity of plywood producing plants by economic area, Douglas-fir region, 1966.

Table 3. — Distribution of sawmills in western Oregon and western Washington, by size class, specified years, 1950-66

Year	(Percent)				
	Sawmills <sup>1</sup>				
	D	C	B	A	Total
Western Oregon:					
1950	67	19	6	8	100
1960	39	28	19	14	100
1966	23	28	29	20	100
Western Washington:					
1950	69	12	6	13	100
1960	62	20	6	12	100
1966	64	16	8	12	100

Source: Data for 1950 and 1960 from Ho, Franklin Y. H. Small lumber companies in western Oregon. Table II-6. University of Portland, 1963.

<sup>1</sup> Sawmills denoted as follows: class A mills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

grated veneer and plywood operations which produce both veneer and finished plywood, and plywood layup plants which operate on purchased veneer.

Combining capacities of integrated veneer and plywood operations with plywood layup plants gave the region a total 1966 plywood capacity of 24,598,000 square feet, 3/8-inch basis, per 8-hour shift. Over 46 percent of the capacity was in the areas of Eugene, Medford, and Corvallis (table 4 and fig. 13). The Eugene area alone accounted for 17.3 percent of the capacity. In general, the lowest plywood capacity was found in those areas on the west coast of Washington and northwestern Oregon.

Until the latter part of the 1940's, about two-thirds of the region's plywood industry was in western Washington, with 50 percent or more in the Puget Sound area. However, when the center of log production shifted

from western Washington to western Oregon in the early 1940's plywood production followed suit. By the early 1950's, the center of production had shifted to northern California and southwestern Oregon, where the availability of large, old-growth Douglas-fir logs containing a high percentage of peeler grade was the basis for expansion. As technologies changed and markets for low-grade plywood developed, the plywood industry was able to peel larger quantities of smaller saw-log grades and species other than Douglas-fir. This allowed the industry to expand beyond the old-growth concentrations in the region.

Today, in terms of value added by manufacture, the plywood industry ranks second in importance to the lumber industry in Oregon and third, behind lumber and pulp, in Washington. In 1966, the plywood industry consumed 30.8 percent of all logs used in domestic production in the region.



Table 4. — Plywood capacity in the Douglas-fir region, by economic area, 1966  
(Thousand square feet, 3/8-inch basis, per 8-hour shift)

Economic areas by district	Capacity of —		
	Integrated veneer and plywood plants <sup>1</sup>	Plywood layup plants	Total plywood
Puget Sound:			
Bellingham	275	--	275
Port Angeles	200	--	200
Seattle	510	60	570
Tacoma	749	500	1,249
District total	1,734	560	2,294
Columbia River:			
Aberdeen	434	150	584
Longview	386	--	386
Astoria	585	--	585
Portland	2,230	101	2,331
Salem	812	272	1,084
Corvallis	1,071	2,238	3,309
Eugene	3,381	872	4,253
District total	8,899	3,633	12,532
Southwest Oregon:			
Roseburg	1,254	275	1,529
Coos Bay	2,593	--	2,593
Medford	1,891	1,962	3,853
District total	5,738	2,237	7,975
Northwest California:			
Eureka	1,797	--	1,797
Total, Douglas-fir region	18,168	6,430	24,598

<sup>1</sup> Integrated operations producing both veneer and plywood.

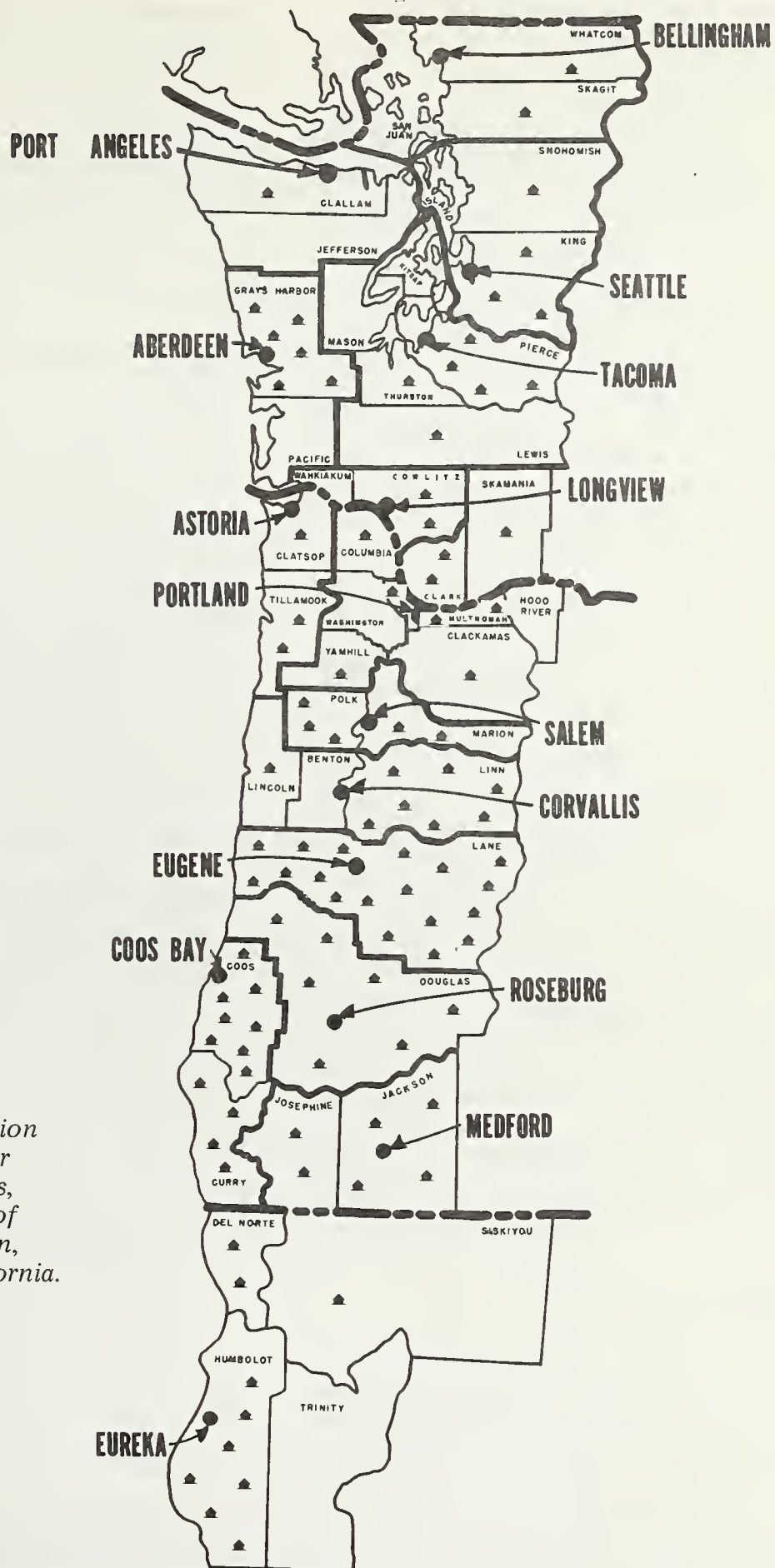


Figure 14. — Location of integrated veneer and plywood plants, Douglas-fir region of Washington, Oregon, and northern California.

### **Integrated veneer and plywood operations concentrated in Eugene economic area**

The Eugene area had the largest number (18) of integrated veneer and plywood plants (producing both veneer and plywood) with a plant capacity of 3,381,000 square feet, 3/8-inch basis, per 8-hour shift, or 18.6 percent of the region's total capacity (fig. 14, table 4).

Douglas-fir region integrated plants accounted for 21.5 percent of the total volume of logs utilized in regional production: 29.5 percent of the logs consumed in Oregon, 13.8 percent of Washington's logs, and 10.7 percent of northern California's logs.

Integrated veneer and plywood plants operated largely on logs, with 95 percent of their input in this form. The remaining 5 percent was in the form of purchased veneer used by the plywood portion of the operation. Oregon plants relied a little more on logs (98 percent) than either Washington (89 percent) or California (85 percent).

### **Veneer operations concentrated in Eugene and Roseburg areas**

In 1966, the Douglas-fir region had 59 veneer plants with a reported capacity of 8,274,000 square feet, 1/8-inch basis, per 8-hour shift (table 1, fig. 15). The largest concentration of veneer operations was in the Eugene economic area, with 13 plants and 20.7 percent of the region's veneer capacity. The Roseburg area, with nine plants, had 16.6 percent of the veneer capacity. Four areas, Bellingham, Aberdeen, Longview, and Astoria, had no veneer operations. Veneer operations accounted for 8.7 percent of the total logs consumed in the region.

### **Plywood layup capacity concentrated in Corvallis economic area**

In the Douglas-fir region, there were 32 plywood layup operations having a total capacity of 6,430,000 square feet, 3/8-inch basis, per 8-hour shift (table 1, fig. 16).

The Medford economic area had eight plywood layup plants, followed by the Corvallis area with six. However, the Corvallis area plants had a plywood capacity of 2,238,000 square feet per shift versus

1,962,000 square feet for layup plants located in Medford. These layup plants relied on one or more of the veneer operations for their veneer requirements.

In general, veneer plants are located as close as possible to their timber supply to reduce log transportation costs, and layup plants are situated so as to take better advantage of the rail transportation needed to market their product.

## **Pulp Industry**

### **Pulp operations concentrated near Columbia River**

The pulp industry is the second oldest manufacturing industry in the region. Availability of large quantities of spruce and hemlock needed for sulfite pulp and adequate water supplies dictated the location of the first pulp plants. Since then, technological changes and expanding markets for all kinds of woodpulp-based products have allowed the industry to expand geographically and diversify production. In 1966, the pulp industry accounted for 10.9 percent of the region's total log consumption.

### **Western Washington and western Oregon pulp capacity increases 1.3 million tons in 6 years**

The annual pulp capacity for western Oregon and western Washington, assuming 350 24-hour operating days, is 5,699,050 tons. Western Oregon's share is 2,044,000 tons yearly, and western Washington's share, 3,655,050 tons. Compared with Fedkiw's findings,<sup>10</sup> since 1960, western Oregon's capacity has increased by 715,000 tons and western Washington's by 622,000 tons.

The pulp industry is concentrated near the Columbia River where 21 of the region's 39 mills are located, with a capacity of 10,361 tons or 59.9 percent of the total daily capacity (table 2, fig. 17). The Portland economic area, straddling Oregon and Washing-

<sup>10</sup>Fedkiw, John. *Forest industry capacity, production, and available log supplies in the Douglas-fir sub-region. Pacific Northwest Forest & Range Exp. Sta. USDA Forest Serv. Res. Pap. PNW-11, 63 pp., illus. 1964.*



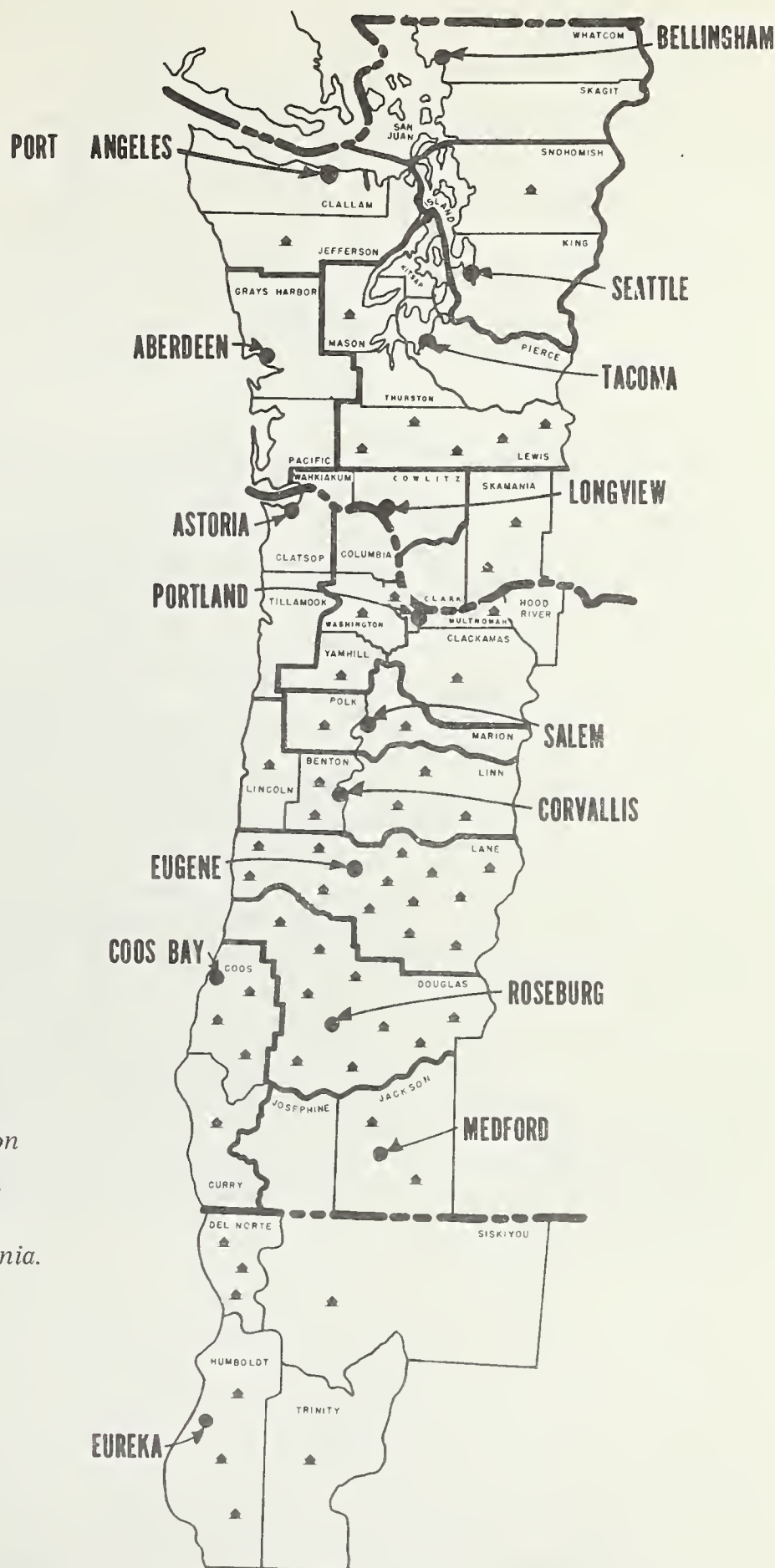


Figure 15. — Location of veneer plants, Douglas-fir region of Washington, Oregon, and northern California.

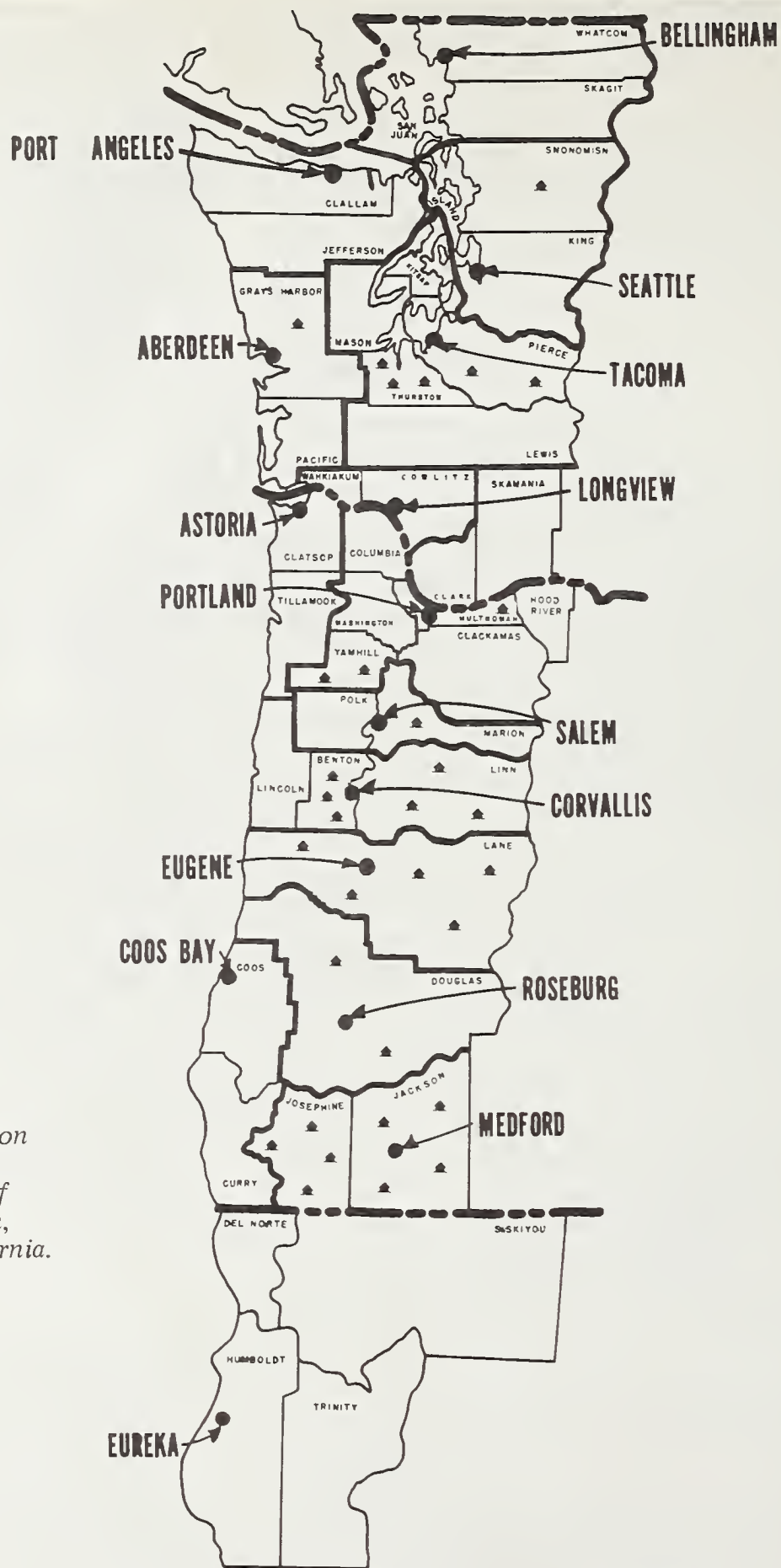


Figure 16. — Location of plywood plants, Douglas-fir region of Washington, Oregon, and northern California.

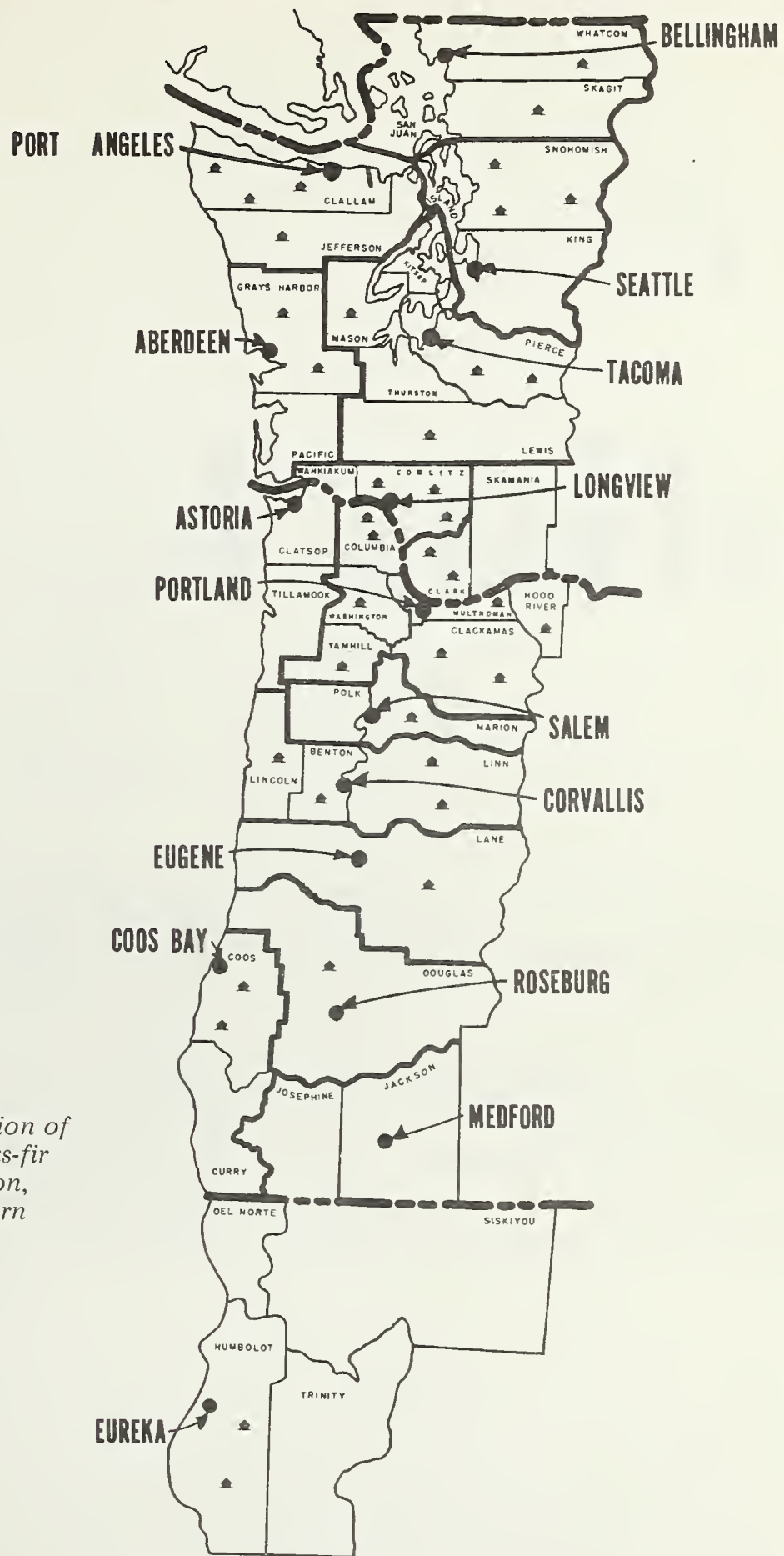


Figure 17. — Location of pulp plants, Douglas-fir region of Washington, Oregon, and northern California.



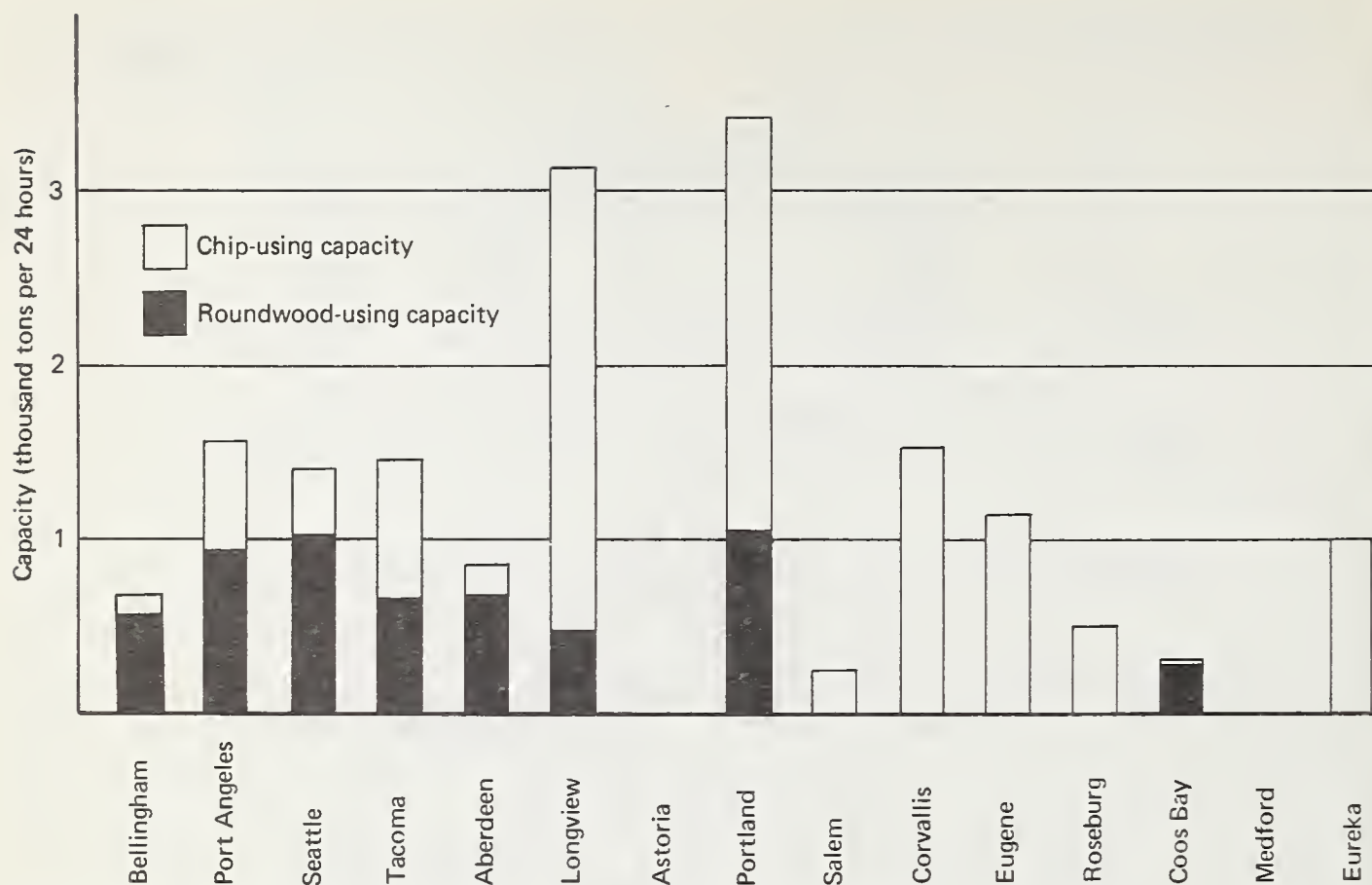


Figure 18. — Capacity of pulp mills by economic areas, Douglas-fir region, 1966.

ton on the Columbia River, had the highest pulp capacity with 3,436 tons per 24 hours (fig. 18). The Longview area, also on the river, followed with 3,111 tons.

## Shake and Shingle Operations

Shake and shingle operations concentrated in western Washington

Most of the shake and shingle operations responding to the canvass were located in

western Washington with the Aberdeen economic area reporting the highest shake and shingle mill capacity, 297,000 board feet per 8-hour shift (table 2, fig. 19). The Port Angeles area was second in mill capacity, and the Bellingham area was second in number of plants. All but two of the operations were in the class, under 40,000 board feet capacity per 8-hour shift. Most of these mills were geographically so located as to take advantage of the western redcedar growing in western Washington.

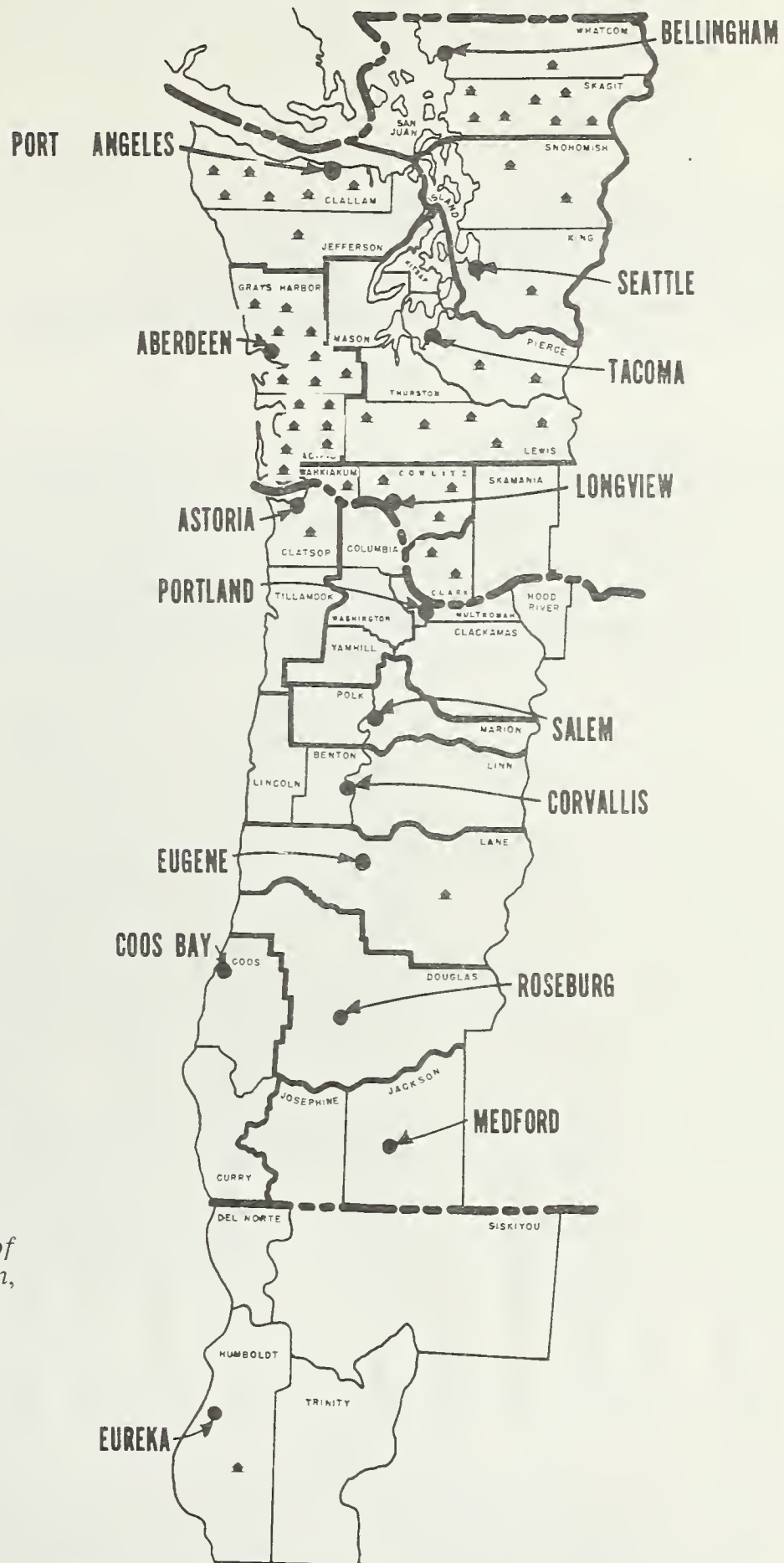


Figure 19. — Location of responding active shake and shingle mills, Douglas-fir region of Washington, Oregon, and northern California.

# LOG CONSUMPTION BY ECONOMIC AREAS AND TYPE OF INDUSTRY

Eureka economic area region's largest log market; over 2 billion board feet used in 1966

The Eureka economic area was the region's largest log market in 1966, utilizing 2,120 million board feet of logs or 15.4 percent of total regional log consumption by wood products manufactured (table 5, fig. 20). This

area's heavy log use is a reflection of the large redwood lumber industry in the area. As previously noted, the area has the largest sawmill capacity in the region, leading in both class A and B sawmills and second only to the Portland area in capacity of class C sawmills.

Four other areas in the region consumed over 1 billion board feet of logs each in

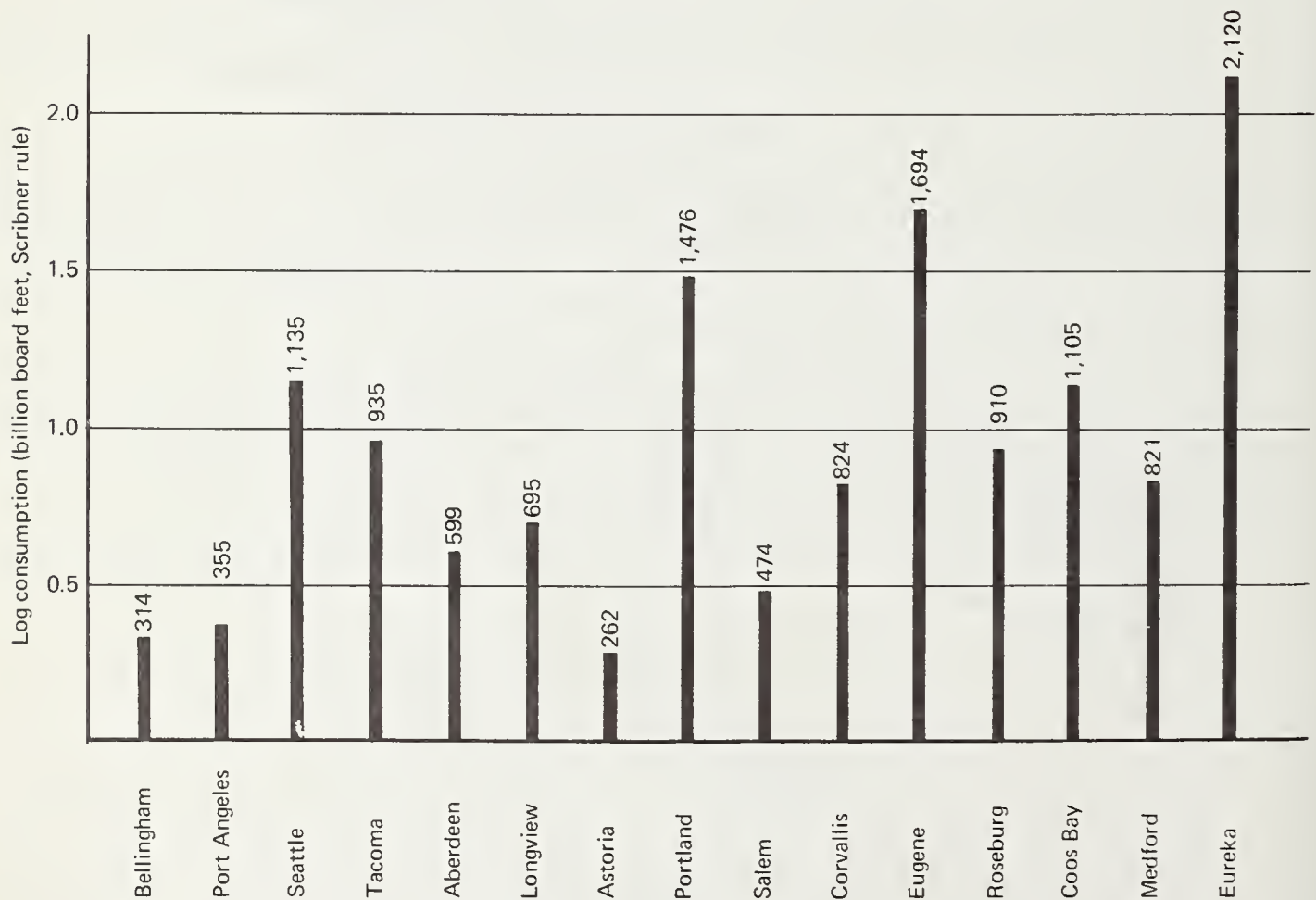


Figure 20. — Log consumption by economic area, Douglas-fir region, 1966.



Table 5. — Log consumption by economic area and type of plant, Douglas-fir region, 1966  
(Thousand board feet, Scribner log rule)

Economic area by district	Type of plant										
	Shake and shingle	Sawmills <sup>1</sup>				Veneer	Veneer and plywood <sup>2</sup>	Pulp	Total		
		D	C	B	A					Total	
Puget Sound:											
Bellingham	13,650	15,920	42,959	--	--	58,879	--	58,879	58,254	183,696	314,479
Port Angeles	29,764	17,540	--	--	30,000	47,540	10,000	47,540	39,749	227,710	354,763
Seattle	5,300	58,705	58,641	124,000	452,000	693,346	3,080	693,346	109,915	323,839	1,135,480
Tacoma	13,508	45,594	143,981	140,800	194,274	524,649	134,200	524,649	146,218	116,100	934,675
District total	62,222	137,759	245,581	264,800	676,274	1,324,411	147,280	1,324,411	354,136	851,345	2,739,397
Columbia River:											
Aberdeen	46,318	10,040	18,818	27,000	237,608	293,466	--	293,466	58,613	200,789	599,186
Longview	8,308	28,850	21,729	34,906	363,790	449,275	--	449,275	94,821	142,368	694,772
Astoria	1,878	12,459	11,000	107,543	34,289	165,291	--	165,291	94,532	--	261,701
Portland	123	65,176	191,239	218,041	426,759	901,215	78,155	901,215	265,804	231,029	1,476,326
Salem	--	4,200	40,516	180,023	56,500	281,239	26,516	281,239	166,416	--	474,171
Corvallis	--	18,364	104,878	85,060	223,492	431,794	103,124	431,794	289,334	--	824,252
Eugene	9,000	23,075	163,265	219,413	494,665	900,418	240,158	900,418	544,209	--	1,693,785
District total	65,627	162,164	551,445	871,986	1,837,103	3,422,698	447,953	3,422,698	1,513,729	574,186	6,024,193
Southwest Oregon:											
Roseburg	--	8,752	84,823	247,252	81,600	422,427	245,366	422,427	241,906	--	909,699
Coos Bay	--	4,176	46,185	131,202	359,631	541,194	104,881	541,194	396,099	62,661	1,104,835
Medford	--	33,000	20,599	277,903	194,867	526,369	69,436	526,369	225,508	--	821,313
District total	--	45,928	151,607	656,357	636,098	1,489,990	419,683	1,489,990	863,513	62,661	2,835,847
Northwest California:											
Eureka	500	1,500	288,349	613,579	815,397	1,718,825	173,528	1,718,825	227,053	--	2,119,906
Total, Douglas-fir region	128,349	347,351	1,236,982	2,406,722	3,964,872	7,955,927	1,188,444	7,955,927	2,958,431	1,488,192	13,719,343

<sup>1</sup> Sawmills denoted as follows: class A mills = 120,000+ board feet capacity per 8-hour shift;  
B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

<sup>2</sup> Integrated operations producing both veneer and plywood.

1966 — Eugene, Portland, Seattle, and Coos Bay. Each of these areas has a well-established forest industry with lumber and plywood firms accounting for most of the log consumption. In the Eugene, Portland, and Seattle areas, pulp mills also played an important part.

At the opposite extreme, the Astoria and Bellingham areas formed the smallest timber markets, consuming only 262 million board feet and 314 million board feet, respectively, or 1.9 percent and 2.3 percent of the region's total log consumption. Neither of these two areas has a well-developed or diversified forest industry.

Three of the region's leading log markets, Eureka, Eugene, and Coos Bay, were rated as heavily timber dependent. In each of these areas, manufacturing employment is mainly in the forest industries, and the forest industries accounted for the largest portion of employment involved in producing goods for export. In the Portland area, there is a more diversified and a wider manufacturing base, and, al-

though the area is a large market for logs and consequently has a large amount of forest industry employment, such employment forms a much smaller portion of total export producing employment. Thus the Portland area was rated as only moderately timber dependent. Conversely, the small Astoria log market was classified as highly timber dependent. The limited amount of forest industry in the area provides the area's major employment producing goods for export because of the limited amount of other manufacturing employment located in the Astoria area.

**Lumber industry major log user; consumes 58.0 percent of region's supply**

The region's sawmills reported using 7,956 million board feet of logs, or 58.0 percent of all logs consumed in the region during 1966 (table 5, fig. 21). The Eureka area's lumber

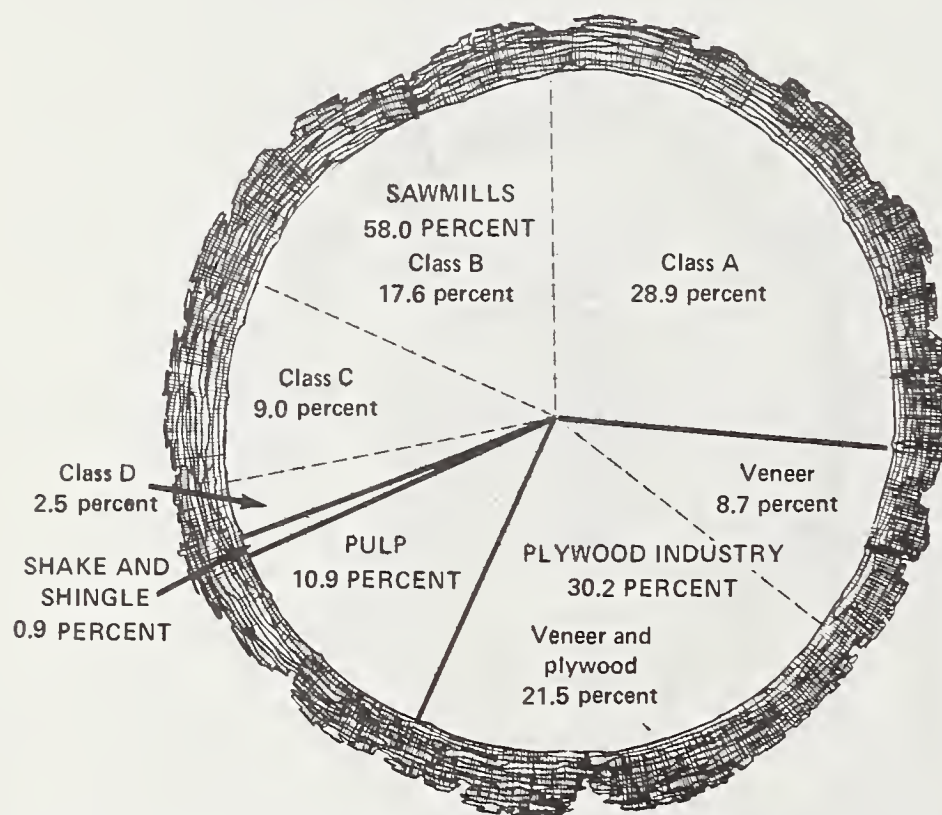


Figure 21. — How the region's forest industry shared the timber harvest. Class A sawmills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

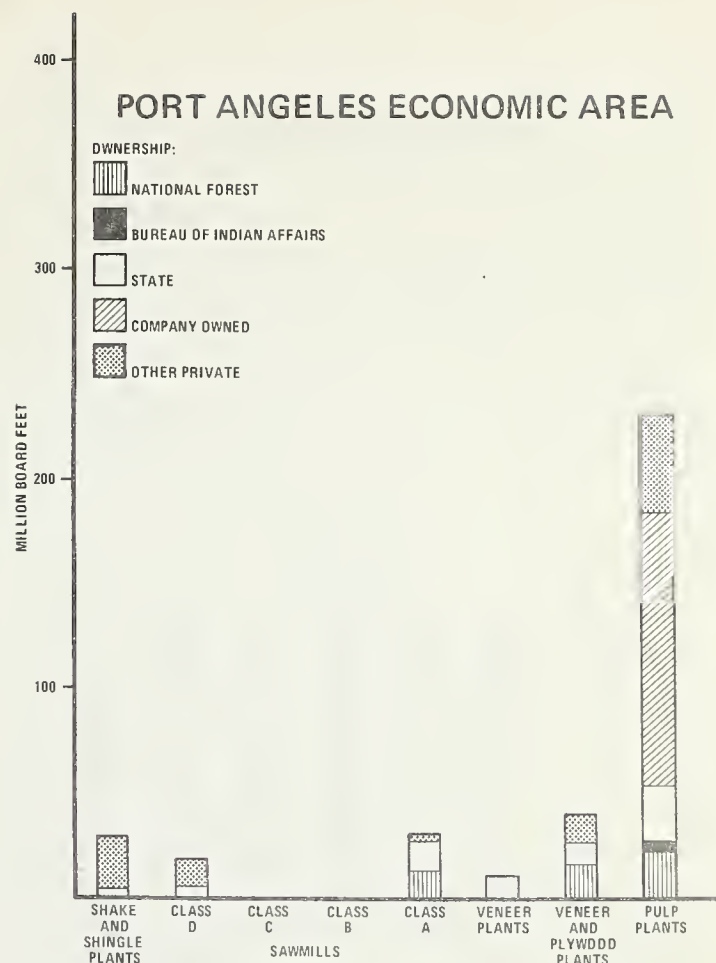
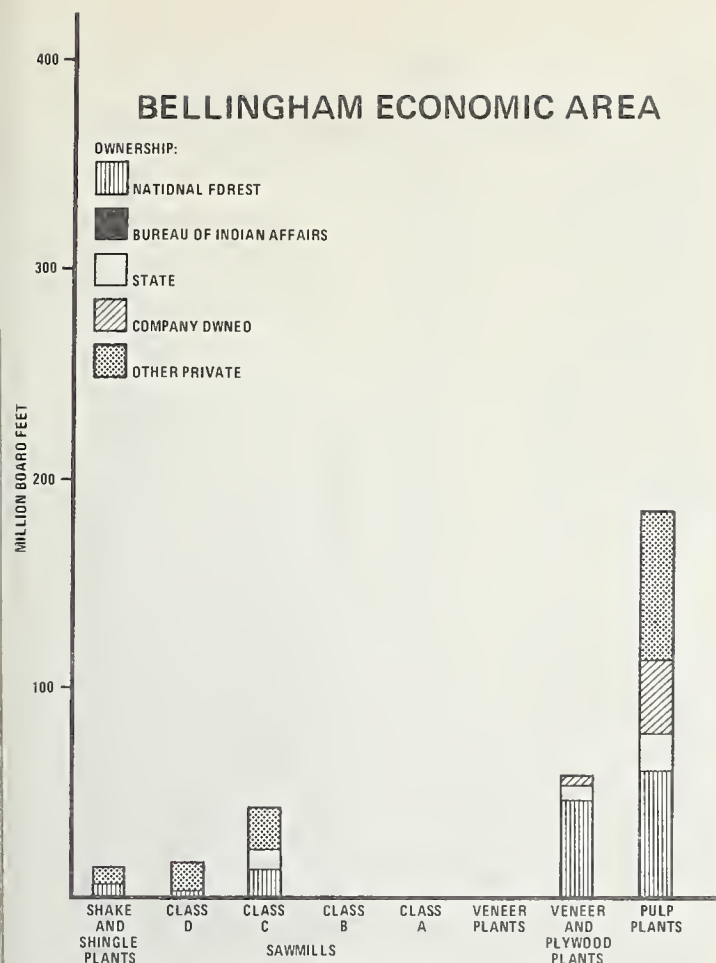
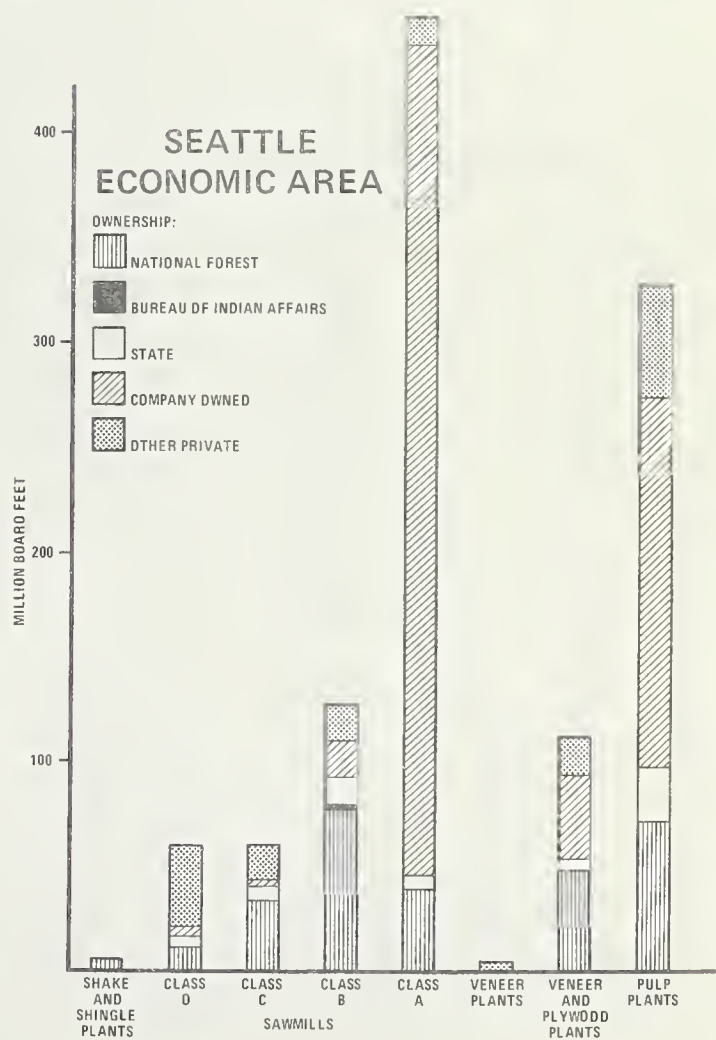
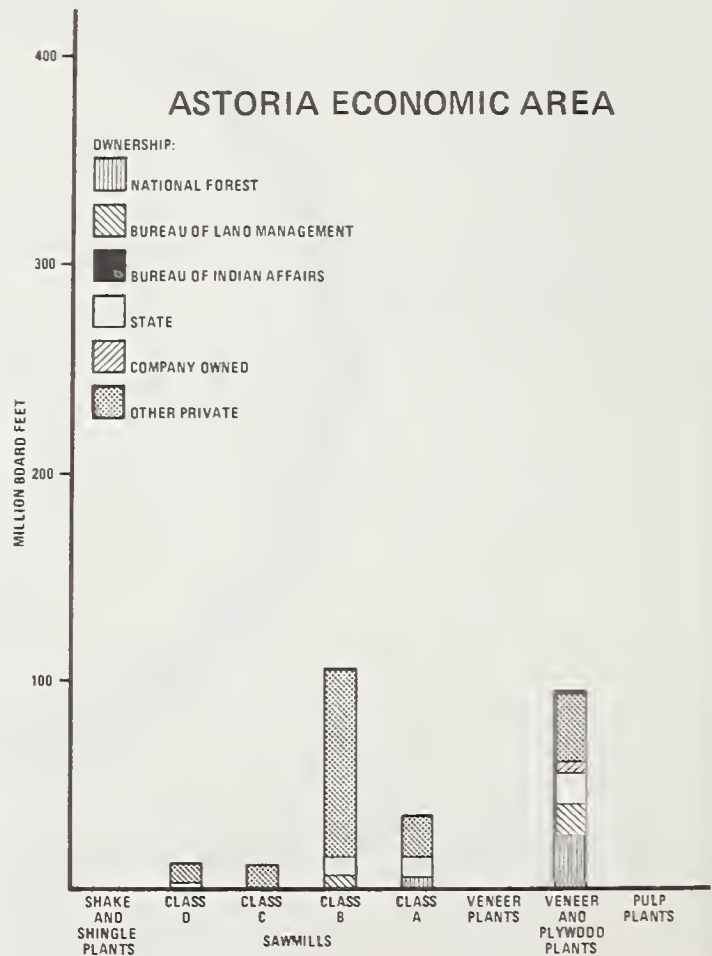
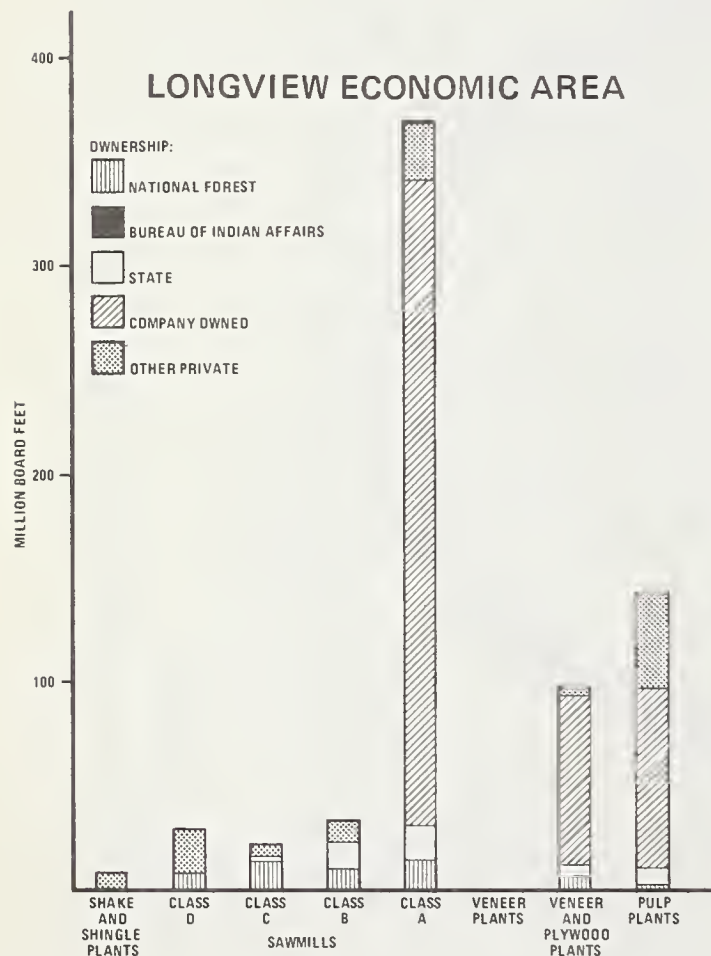
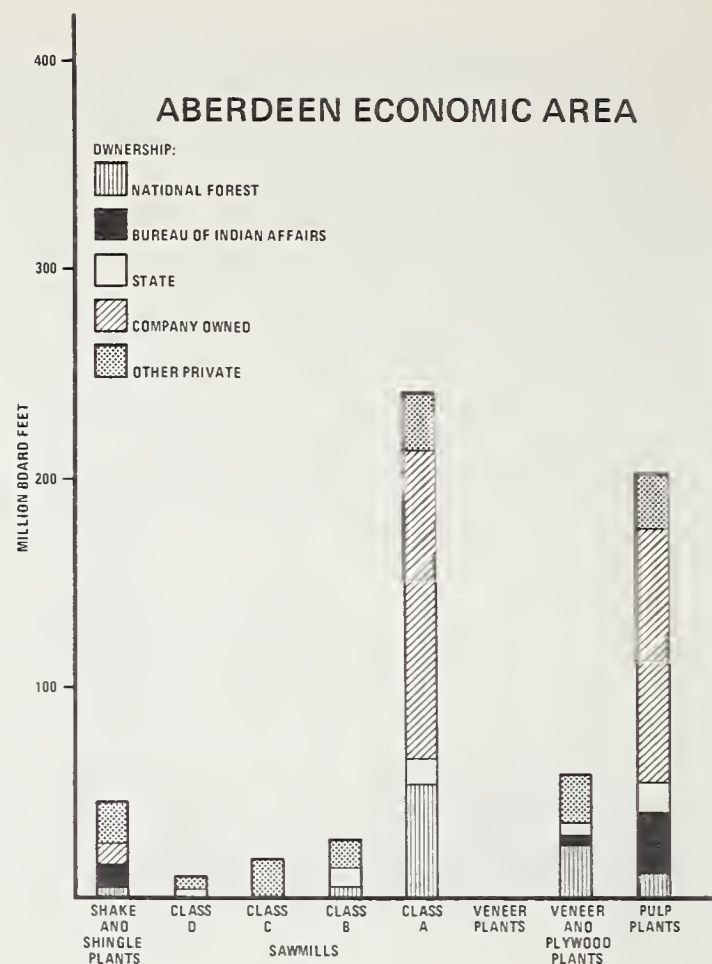
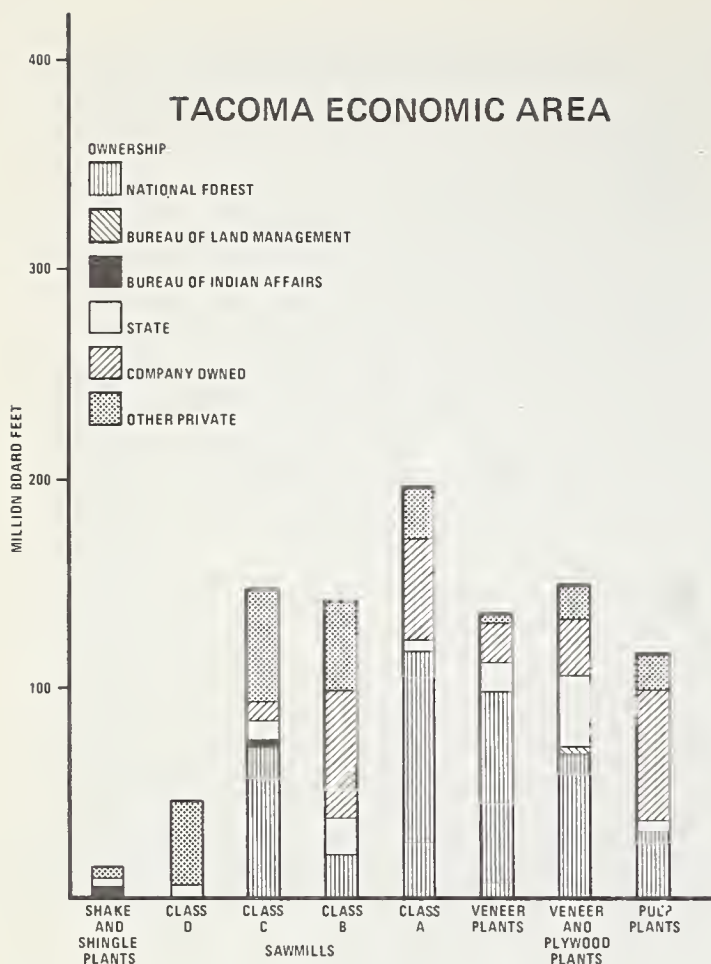
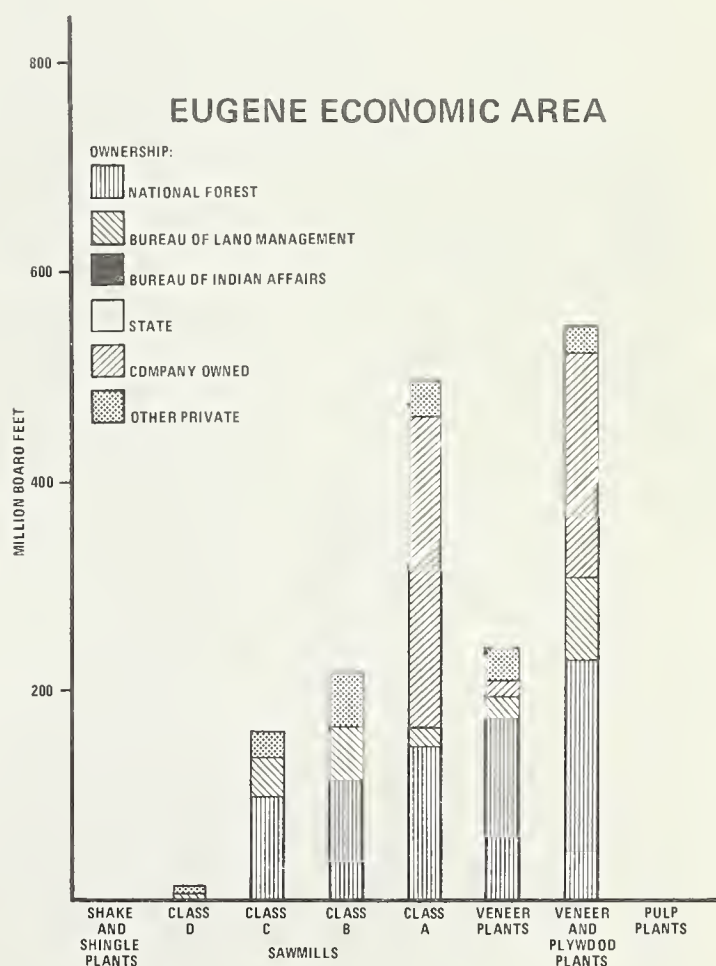
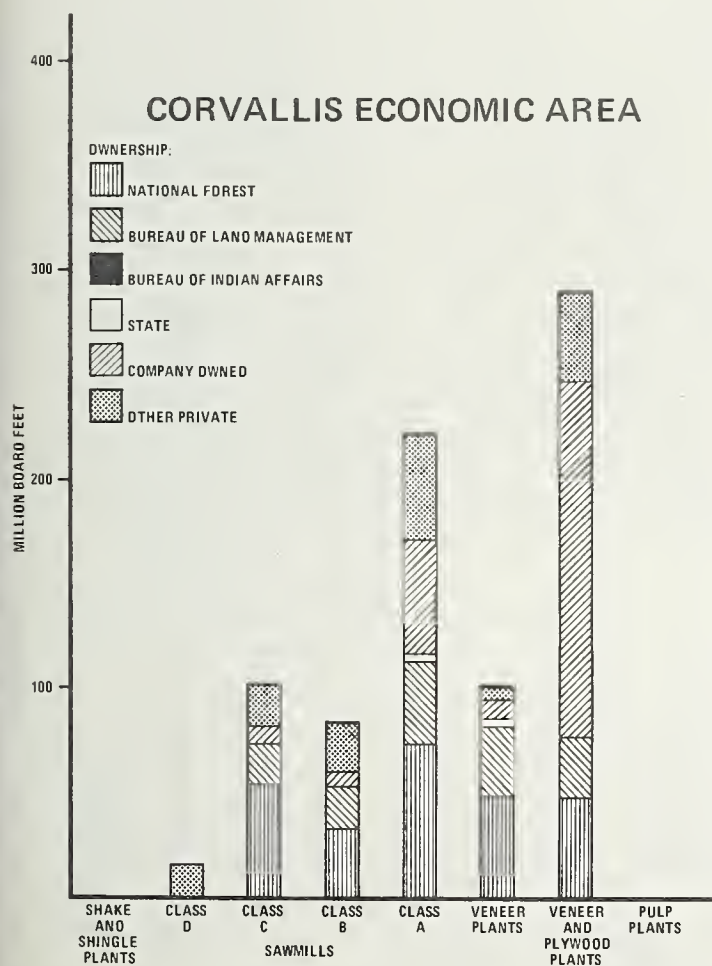
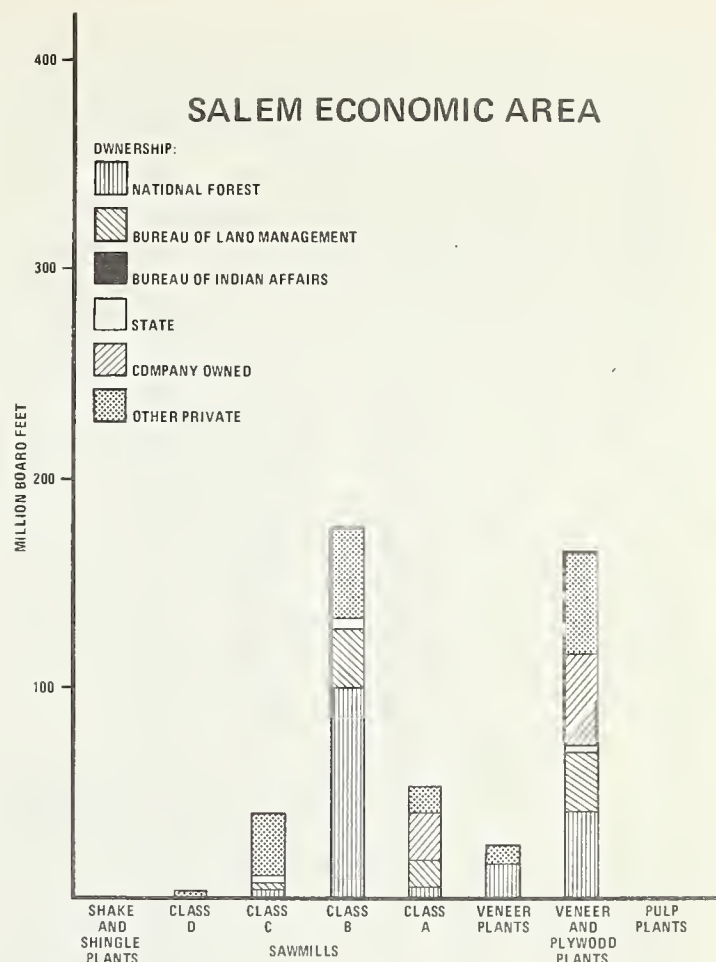
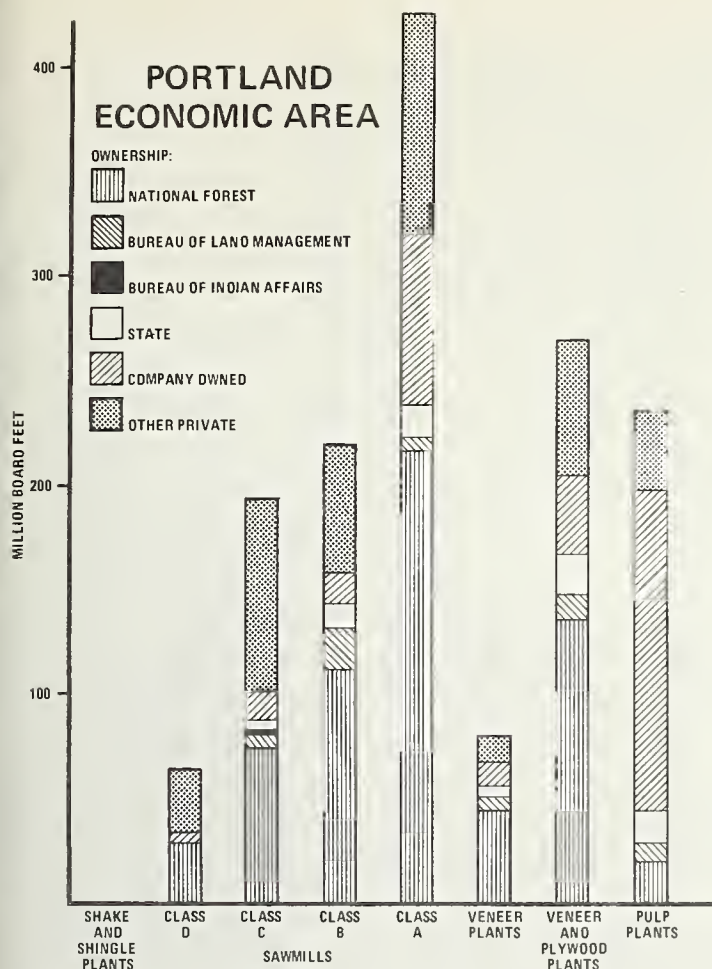


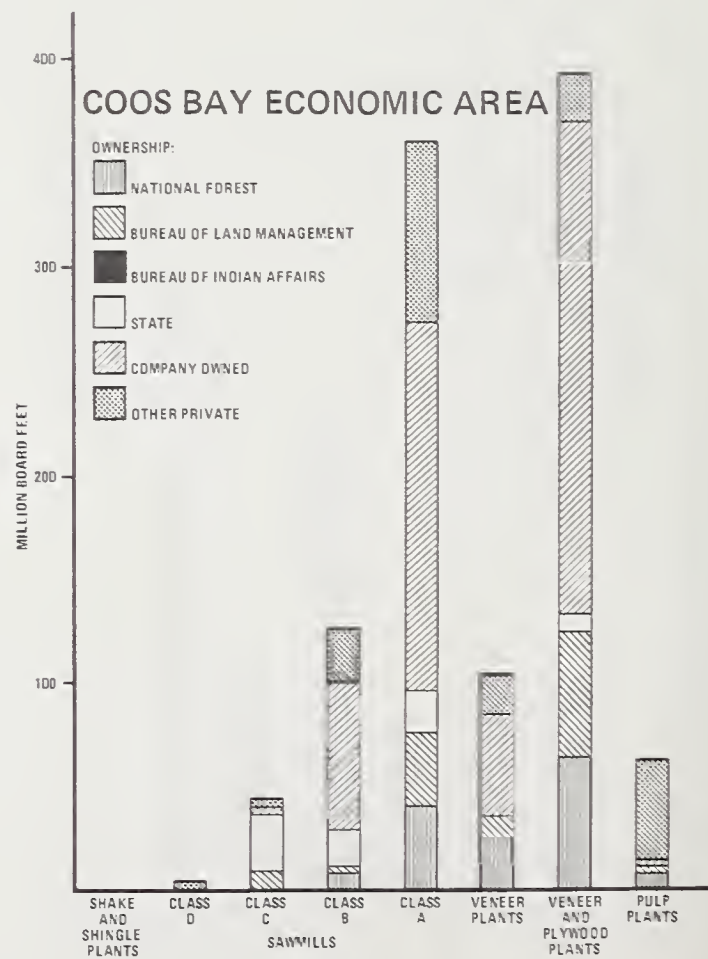
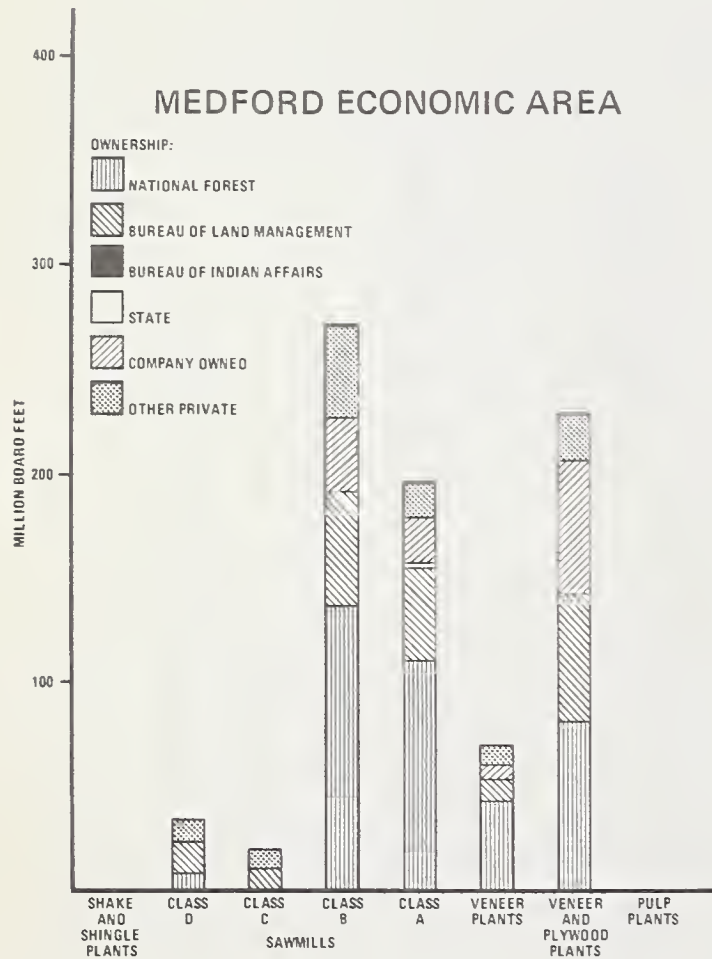
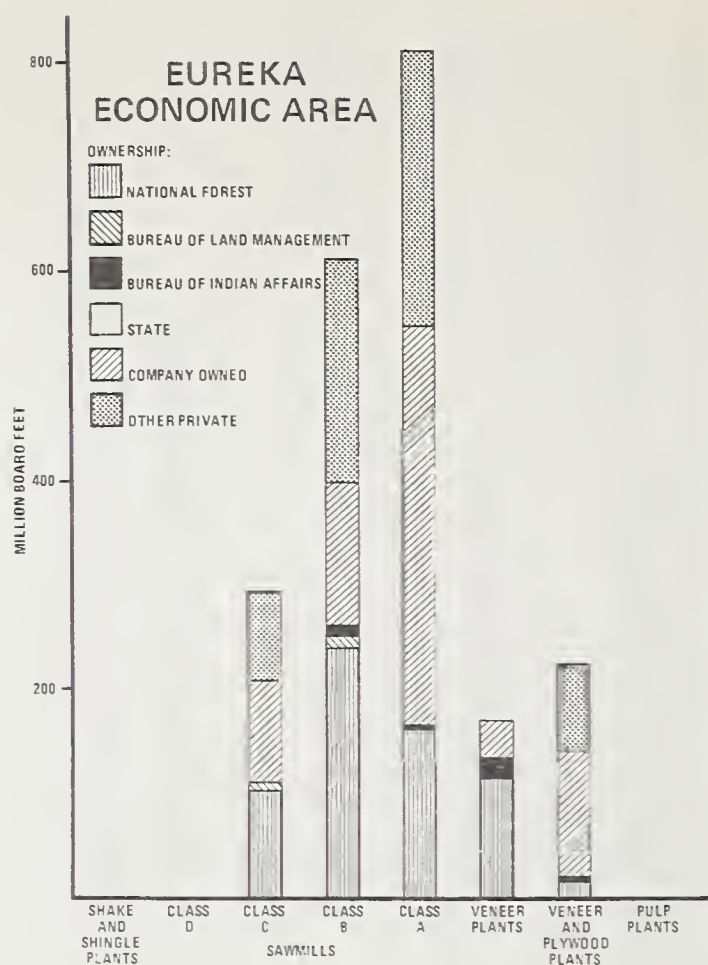
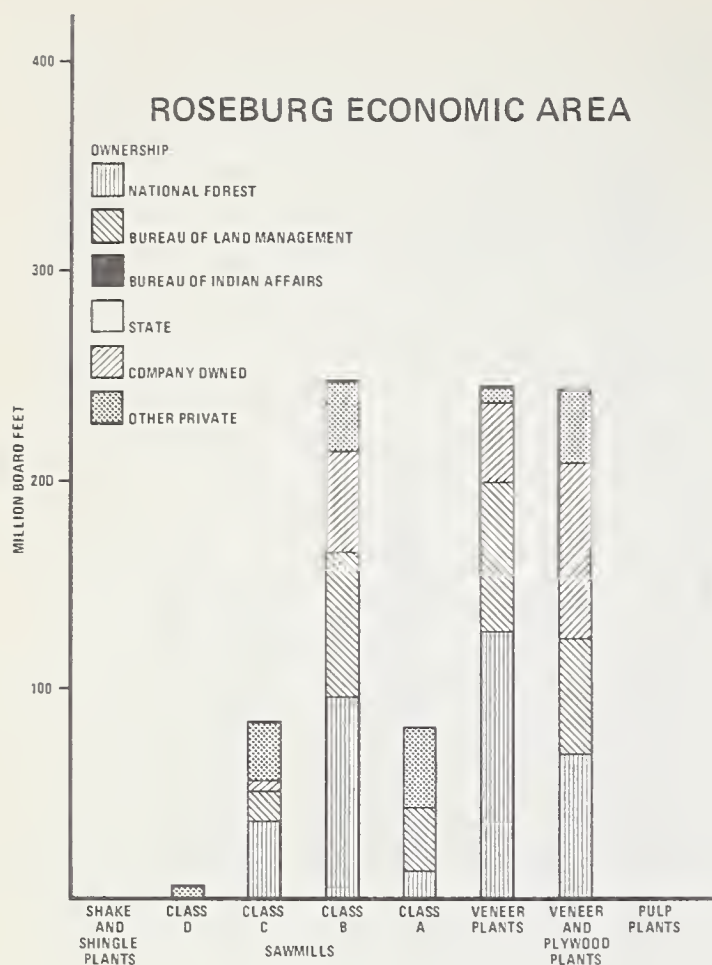
Figure 22. — Consumption of logs from each ownership class by plant type and economic area, Douglas-fir region, 1966.  
 Class A sawmills = 120,000+ board feet capacity per 8-hour shift;  
 B = 80,000-119,000;  
 C = 40,000-79,000;  
 D = less than 40,000.













industry was the largest saw-log user, consuming 21.6 percent of the region's saw logs. The major saw-log consuming areas were the same as the major markets for all logs, namely Eureka, Portland, Eugene, Seattle, and Coos Bay. The consumption of saw logs was smallest in the Port Angeles and Bellingham areas. Figure 22 presents each area's log consumption pattern by mill type.

There was not much difference in the region between percents of 8-hour shift capacity and of total saw logs consumed by each class mill. The tabulation below shows the variation between classes:

Class	Percent of sawmill 8-hour shift capacity	Percent of saw logs consumed
A	44.7	49.8
B	29.6	30.3
C	18.8	15.5
D	6.9	4.4
Total	100.0	100.0

With the seasonal type of operation found in many of the smaller mills and the operation of more than one shift by some of the larger mills, it was expected that large mills would consume a much higher portion of the region's saw logs relative to the proportion of 8-hour shift capacity they represent. This is apparently not true. The weak lumber market, especially during the last half of 1966, may partially explain the findings. Many of the seasonal operations may have been shut down at the time the study was conducted, thus lowering the percent of total capacity of class D mills accounted for. In addition, the incidence of double shift operations may not be any larger for mills in the larger size classes than in the other classes.

#### Plywood industry utilizes 30.2 percent of region's timber

The Douglas-fir region's plywood industry utilized 4,147 million board feet of logs in 1966, 30.2 percent of the region's total log consumption (table 5, fig. 21). Veneer operations used 1,188 million board feet of logs or 8.7 percent of the total log volume, and inte-

grated veneer and plywood operations (producing both veneer and plywood) accounted for 2,958 million board feet or 21.5 percent of total regional log consumption. The centers of the region's plywood industry are the Eugene and Coos Bay areas, which use 31.8 percent of the logs going to integrated veneer and plywood plants and 29.0 percent of all logs going to veneer plants. The Eugene area accounted for 18.4 percent of the logs consumed by the integrated veneer and plywood plants, followed by Coos Bay with 13.4 percent. Veneer plant log consumption was largest in the Roseburg area, between the Eugene and Coos Bay areas, with 20.6 percent, and in Eugene with 20.2 percent of the total. In general, log consumption followed the same pattern as plywood production.

Pulp plants utilize 1,488 million board feet of logs, 10.9 percent of regional total

Pulp plants reported consuming 1,488 million board feet of logs in 1966, 10.9 percent of the total log volume (table 5, fig. 22). The Seattle area was the largest log consumer; its pulp plants used 324 million board feet. Only eight areas reported log consumption by pulpmills (fig. 18). The percent of pulp capacity operating on logs varied throughout the region — western Washington pulp plants used logs for 55 percent of their raw material input as compared with 13 percent for western Oregon plants (table 6). California had only two plants, both operating entirely on chips. In western Washington, the Aberdeen economic area pulpmills operated 81 percent on logs; Bellingham used 79 percent logs; and Seattle, 84 percent. One exception to low log use in Oregon was the Coos Bay area where logs made up 98 percent of pulpwood inputs.

Comparison of pulp capacity operating on roundwood shown in this study with that presented by Guthrie and Iulo<sup>11</sup> based on a wood supply survey conducted by Arthur Anderson and Company for 1960 reveals a greater reli-

<sup>11</sup>Guthrie, John A., and Iulo, William. *Some economic aspects of the pulp and paper industry, prepared under the sponsorship of the Northwest Pulp and Paper Association, Seattle, Washington. 106 pp., illus. 1963.*

Table 6. — Percent of pulp capacity operating on logs by economic area, Douglas-fir region, 1960 and 1966

Economic areas by district	1960 <sup>1</sup>	1966
Puget Sound:		
Bellingham	52.4	84.2
Port Angeles	55.4	60.0
Seattle	58.0	76.0
Tacoma	71.4	47.0
Columbia River:		
Aberdeen	72.4	81.0
Longview	74.6	16.0
Astoria	--	--
Portland	73.0	31.0
Salem	( <sup>2</sup> )	0
Corvallis	( <sup>2</sup> )	0
Eugene	( <sup>2</sup> )	0
Southwest Oregon:		
Roseburg	( <sup>3</sup> )	0
Coos Bay	( <sup>2</sup> )	98.0
Medford	--	--
Northwest California:		
Eureka	( <sup>3</sup> )	0

<sup>1</sup> Guthrie, John A., and Iulo, William. *Some economic aspects of the pulp and paper industry*. Prepared under the sponsorship of the Northwest Pulp and Paper Association, Seattle, Washington, May 1963. Data converted from value figures.

<sup>2</sup> Salem, Corvallis, Eugene, and Coos Bay areas combined, operated 36 percent on logs in 1960 and 8 percent in 1966. Of these areas, only Coos Bay used logs in 1966.

<sup>3</sup> Data not available.

ance on roundwood in the Puget Sound district and a lesser use of logs throughout western Oregon in 1966 (table 6). This may be an indication that in the Puget Sound area second-growth timber is being increasingly utilized for pulp. In Oregon, the increased use of chips is an indication of the increased utilization of all forest products which is taking place.

#### **Shake and shingle plant log use totals 128 million board feet**

Shake and shingle operations contacted in this study consumed 128 million board feet of logs in 1966, representing only 0.9 percent of the region's total log consumption (table 5, fig. 21). The pattern closely followed the distribution of shake and shingle capacity, with the Aberdeen area the major consumer.



# REGIONAL LOG FLOWS

Log movement in region limited

Logs are bulky and costly to transport, and the region's forest industry generally obtained its log supplies from within the same area in which the industry was located (table 7). This is especially true in the areas rated as highly

timber dependent. The Roseburg, Port Angeles, and Eureka areas, all so rated, were the region's most self-sufficient timber areas, each obtaining over 96 percent of the logs used by its forest industry from within its own boundaries. In general, the more timber dependent the area's economy was, the more self-

sufficient was the area in terms of timber supply (fig. 23). The Longview area was the only area with a highly timber dependent economy that obtained less than 60 percent of its needed log supplies from within its own borders; this can be attributed to the relative ease of moving logs on the nearby Columbia River.

The generally limited amount of log movement within the region is illustrated by the fact that nine of the region's 15 economic areas obtained over 70 percent of their log requirements from their respective areas. Only one area, Salem, reported obtaining over 50 percent of the logs utilized by its forest industry from outside the area.

Some of the logs consumed in the Douglas-fir region in 1966 came from outside the region. In total, 47.6 million board feet were

imported from Canada and Idaho, with about two-thirds of this volume going to the Bellingham area and the remainder to Seattle area plants. The Seattle area was also the major west-side consumer for eastern Washington logs, using 52.6 million board feet or 97 percent of all eastern Washington logs consumed in western Washington. The Medford area was a market for 57.8 million board feet of eastern Oregon logs, and a small volume of eastern Oregon logs also went to the Portland and Eugene areas.

Seattle area is region's leading log importer

Although the Salem area forest industry imported a larger percentage of its logs than any other area in the region (67.6 percent),

Table 7. — Flow of logs by economic area of origin and destination, Douglas-fir region, 1966

(Thousand board feet, Scribner log rule)

Economic area of log origin	Economic area of log utilization															Total <sup>1</sup>
	Bellingham	Port Angeles	Seattle	Tacoma	Aberdeen	Longview	Astoria	Portland	Salem	Corvallis	Eugene	Roseburg	Coos Bay	Medford	Eureka	
Bellingham	204,485	795	126,759	4,992	--	--	--	--	--	--	--	--	--	--	--	337,031
Port Angeles	15,000	342,136	51,402	22,347	32,356	--	--	2,820	--	--	--	--	--	--	--	466,061
Seattle	54,745	5,100	502,689	24,976	--	--	--	--	--	--	--	--	--	--	--	587,510
Tacoma	9,500	6,300	373,882	690,777	8,132	158,897	--	42,300	--	--	--	--	--	--	--	1,289,788
Aberdeen	--	432	5,000	97,614	555,725	70,859	--	46,148	--	--	--	--	--	--	--	775,778
Longview	--	--	5,000	24,632	2,973	377,522	32,061	106,488	--	--	--	--	--	--	--	548,678
Astoria	--	--	--	676	--	1,054	179,631	236,246	20,070	--	--	--	--	--	--	437,680
Portland	--	--	1,325	49,796	--	86,020	17,124	594,391	39,229	5,500	--	--	--	--	--	1,093,385
Salem	--	--	--	--	--	--	--	34,194	153,842	47,664	--	--	--	--	--	235,700
Corvallis	--	--	--	18,000	--	--	31,431	86,906	233,935	655,927	81,433	--	--	--	--	1,107,635
Eugene	--	--	--	--	--	--	1,441	6,400	27,093	115,163	1,317,400	1,901	--	--	--	1,469,402
Roseburg	--	--	--	--	--	--	--	1,600	--	--	281,067	879,661	141,559	92,141	--	1,396,028
Coos Bay	--	--	--	--	--	--	--	--	--	--	9,382	21,121	956,498	8,852	19,760	1,015,613
Medford	--	--	--	--	--	--	--	3,200	--	--	--	7,015	1,616	620,600	2,373	634,804
Eureka	--	--	--	--	--	--	--	--	--	--	--	--	5,161	41,924	2,048,728	2,095,813
Eastern Washington	--	--	52,566	864	--	420	--	314	--	--	--	--	--	--	--	54,164
Eastern Oregon	--	--	--	--	--	--	--	15,321	--	--	4,500	--	--	57,796	--	77,617
Other	--	--	--	--	--	--	--	--	--	--	--	--	--	--	49,045	49,045
California	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Canada and Idaho	30,750	--	16,859	--	--	--	--	--	--	--	--	--	--	--	--	47,609
Total	314,480	354,763	1,135,482	934,674	599,186	694,772	261,701	476,328	474,169	824,254	1,693,782	909,698	1,104,834	821,313	2,119,906	13,719,341

<sup>1</sup> Totals may not agree with previous tables due to rounding.



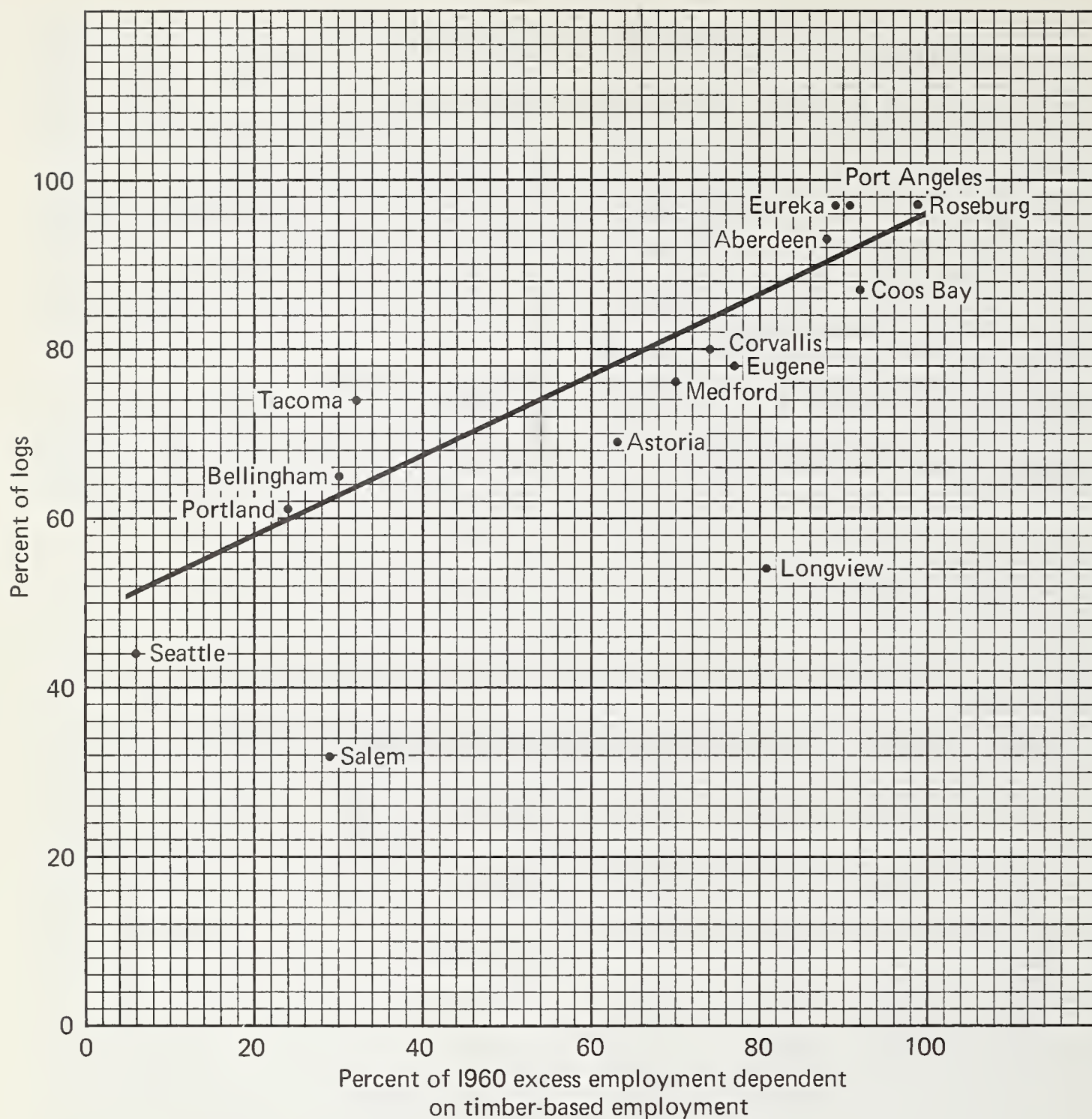


Figure 23. — Relationship of an area's timber dependency to the percent of logs obtained from within the area, Douglas-fir region.

the Seattle area mills imported the largest volume (table 8). Seattle firms imported 632.8 million board feet in 1966, 55.7 percent of the area's log needs. These logs came from 6 other economic areas as well as eastern Washington, Canada, and Idaho. Portland, the

second largest log importer (39.4 percent) in the region, obtained logs from 10 other economic areas as well as eastern Washington and eastern Oregon, making Portland the most diversified area in terms of geographical sources of timber.



Table 8. — Volume of logs imported and exported by economic area, Douglas-fir region, 1966

(Thousand board feet, Scribner log rule)

Economic areas by district	Volume imported	Volume exported <sup>1</sup>	Net balance
Puget Sound:			
Bellingham	109,995	132,546	-22,551
Port Angeles	12,627	123,925	-111,298
Seattle	632,793	84,821	547,972
Tacoma	243,897	599,011	-335,114
District total	999,312	940,303	59,009
Columbia River:			
Aberdeen	43,461	220,053	-176,592
Longview	317,250	171,156	146,094
Astoria	82,066	258,046	-175,980
Portland	581,937	198,994	382,943
Salem	320,327	81,858	238,469
Corvallis	168,327	451,708	-283,381
Eugene	376,382	152,002	224,380
District total	1,889,750	1,533,817	355,933
Southwest Oregon:			
Roseburg	30,037	516,367	-486,330
Coos Bay	148,336	59,115	89,221
Medford	200,713	14,204	186,509
District total	379,086	589,686	-210,600
Northwest California:			
Eureka	71,178	47,085	24,093

<sup>1</sup> Does not include log volumes exported out of the region.

The Portland and Seattle areas were large importers of timber due to their large forest industry concentrations and their need to go outside their predominantly urbanized areas for stumpage. Concentrations of specialty mills within these areas, such as mills operating only on large cull logs, also tend to widen the distance firms must range for their specialized log requirements. Finally, both areas have large concentrations of log-using pulp capacity which tends to have a wider area of raw material procurement than other wood products industries.

#### Tacoma area largest interarea log exporter

The Tacoma economic area shipped 599.0 million board feet of logs to the forest industries located in other economic areas during 1966, with over half the shipments going to Seattle. Roseburg was second in interarea exports, shipping 516.4 million board feet, of which more than half went to the neighboring Eugene area. Seven of the region's economic areas were net exporters, and the other eight, net importers.

# LANDOWNERSHIP AND TIMBER SUPPLY

Private lands supplied 55.1 percent of region's log requirements

Private timberlands were the forest industries' main source of supply, furnishing 55.1 percent of all logs used in 1966 (table 9, fig. 24). Private logs purchased<sup>12</sup> by mill operators accounted for 22.0 percent of the total and

<sup>12</sup>Purchased logs from other private sources may be either from forest industry or other private landowning classes.

logs from company owned or managed lands, the remaining 33.1 percent.

The forest industry in the Eureka area was the largest user of private logs, 1,418.7 million board feet or 18.7 percent of all private logs used in the region. The Longview area forest industry, however, relied most heavily on private logs, obtaining 85.4 percent of its total supply from private sources (table 10). Over 68 percent of the total volume of logs used by the Longview forest industry came from company owned or managed lands. This

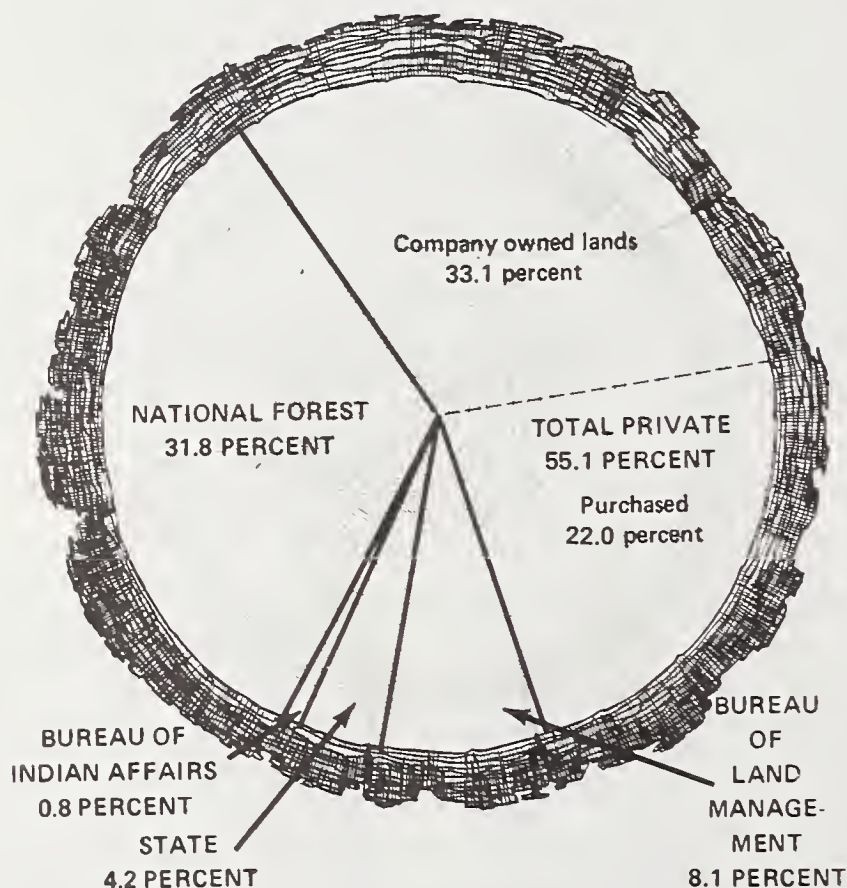


Figure 24. — Source of logs used by the region's forest industry, 1966.

**Table 9. — Volume of timber used from each timber ownership class, by economic area, Douglas-fir region, 1966**  
(Thousand board feet, Scribner log rule)

Economic area by district	National Forest	Bureau of Land Management	Bureau of Indian Affairs	State	Company owned	Other private <sup>1</sup>	Total
<b>Puget Sound:</b>							
Bellingham	127,655	--	2,430	34,437	38,175	111,782	314,479
Port Angeles	50,792	--	5,796	66,315	131,686	100,174	354,763
Seattle	277,789	--	2,911	62,214	631,764	160,802	1,135,480
Tacoma	403,897	3,000	8,345	92,846	226,149	200,438	934,675
District total	860,133	3,000	19,482	255,812	1,027,774	573,196	2,739,397
<b>Columbia River:</b>							
Aberdeen	97,707	--	45,614	44,423	277,315	134,127	599,186
Longview	52,783	480	--	48,084	472,904	120,521	694,772
Astoria	32,472	21,752	--	34,998	6,223	166,256	261,701
Portland	615,970	62,558	3,850	70,142	313,947	409,859	1,476,326
Salem	168,839	72,871	--	12,708	72,333	147,420	474,171
Corvallis	256,740	143,179	--	12,734	248,357	163,242	824,252
Eugene	762,931	214,831	--	5,708	528,718	181,597	1,693,785
District total	1,987,442	515,671	49,464	228,797	1,919,797	1,323,022	6,024,193
<b>Southwest Oregon:</b>							
Roseburg	341,440	241,348	--	2,762	173,672	150,477	909,699
Coos Bay	155,511	124,248	--	79,749	535,921	209,406	1,104,835
Medford	377,689	203,622	--	2,685	125,467	111,850	821,313
District total	874,640	569,218	--	85,196	835,060	471,733	2,835,847
<b>Northwest California:</b>							
Eureka	637,984	21,120	42,074	--	764,185	654,543	2,119,906
<b>Total, Douglas-fir region</b>	<b>4,360,199</b>	<b>1,109,009</b>	<b>111,020</b>	<b>569,805</b>	<b>4,546,816</b>	<b>3,022,494</b>	<b>13,719,343</b>

<sup>1</sup>Other private timber consists of purchased timber volumes from forest industry or other private landowning classes.

was the largest portion of logs used from one source by any economic area.

In addition to Longview, six other areas obtained over 65 percent of their log requirements from private lands: Aberdeen, Coos Bay, Seattle, Eureka, Astoria, and Port Angeles. All these areas but Seattle are classified as having economies strongly dependent on forest-based employment. The importance of private timber throughout the region is further evidenced by the fact that only two areas, Roseburg and Medford, received less than 40 percent of their timber supply from private lands.

The region's lumber industry was the major consumer of logs from private sources, using 4,513 million board feet, or 59.6 percent of all private logs. This was followed by

the plywood industry which used 24.7 percent and the pulp industry which used 14.6 percent (table 11, fig. 25). Distribution of company owned timber was as follows: 54.4 percent to sawmills, mainly to large class A mills, 28.7 percent to the plywood industry, and 16.7 percent to pulp plants (fig. 26). Purchased private timber was also consumed more heavily by the sawmills which used 67.4 percent of the total.

**National Forests furnished  
4,360 million board feet  
of logs, 31.8 percent of  
region's total**

The Douglas-fir region's forest industry reported using 4,360 million board feet of Na-



Table 10. — Percent of timber used in economic areas from each timber ownership class, Douglas-fir region, 1966

Economic areas by district	National Forest	Bureau of Land Management	Bureau of Indian Affairs	State	Company owned	Other private <sup>1</sup>	Total
<b>Puget Sound:</b>							
Bellingham	40.6	--	0.8	11.0	12.1	35.5	100.0
Port Angeles	14.3	--	1.6	18.7	37.1	28.3	100.0
Seattle	24.5	--	.2	5.5	55.6	14.2	100.0
Tacoma	43.2	0.3	.9	9.9	24.2	21.5	100.0
District total	31.4	.1	.7	9.4	37.5	20.9	100.0
<b>Columbia River:</b>							
Aberdeen	16.3	--	7.6	7.4	46.3	22.4	100.0
Longview	7.6	.1	--	6.9	68.1	17.3	100.0
Astoria	12.4	8.3	--	13.4	2.4	63.5	100.0
Portland	41.7	4.2	.3	4.7	21.3	27.8	100.0
Salem	35.6	15.4	--	2.7	15.2	31.1	100.0
Corvallis	31.1	17.4	--	1.6	30.1	19.8	100.0
Eugene	45.1	12.7	--	.3	31.2	10.7	100.0
District total	33.0	8.5	.8	3.8	31.9	22.0	100.0
<b>Southwest Oregon:</b>							
Roseburg	37.5	26.5	--	.3	19.1	16.6	100.0
Coos Bay	14.1	11.2	--	7.2	48.5	19.0	100.0
Medford	46.0	24.8	--	.3	15.3	13.6	100.0
District total	30.8	20.1	--	3.0	29.5	16.6	100.0
<b>Northwest California:</b>							
Eureka	30.1	1.0	2.0	--	36.0	30.9	100.0
Total, Douglas-fir region	31.8	8.1	.8	4.2	33.1	22.0	100.0

<sup>1</sup> Other private timber consists of purchased volumes from forest industry or other private landowning classes.

tional Forest logs in 1966, 31.8 percent of all logs utilized in domestic production that year.

The Eugene area's forest industry was the region's largest market for Forest Service timber, consuming over 760 million board feet, or 17.5 percent of the region's total consumption of National Forest logs. The Eugene area was followed by the Eureka and Portland areas, each using over 600 million board feet of National Forest logs.

National Forest timber was the most important source of logs for the Eugene and Medford areas. The wood used in these areas was, respectively, 45.1 and 46.0 percent National Forest logs. These two areas were the only areas classified as having highly timber-dependent economies, on the basis of timber-based employment, that received more than 40 percent of their timber supplies from the National Forests. In four of the region's areas

**Table 11. — Volume of logs used from each ownership source, by type of plant  
and economic area, Douglas-fir region, 1966**  
(Thousand board feet, Scribner log rule)

Plant type	National Forest Administration	Bureau of Land Management	Bureau of Indian Affairs	State	Company owned	Other private <sup>1</sup>	Total
<b>TOTAL, ALL ECONOMIC AREAS</b>							
Shake and shingle	16,659	1,800	15,553	9,450	11,129	73,758	128,349
Sawmills <sup>2</sup>							
D	61,863	25,913	1,337	24,310	20,087	213,841	347,351
C	497,154	110,153	8,943	63,660	139,891	417,181	1,236,982
B	959,733	271,685	12,000	96,418	395,882	671,004	2,406,722
A	999,631	191,655	7,900	110,819	1,918,871	735,996	3,964,872
Total	2,518,381	599,406	30,180	295,207	2,474,731	2,038,022	7,955,927
Veneer	683,285	153,559	20,437	35,711	185,144	110,308	1,188,444
Veneer and plywood <sup>3</sup>	918,431	342,125	10,450	113,233	1,118,636	455,556	2,958,431
Pulp	223,443	12,119	34,400	116,204	757,176	344,850	1,488,192
Total	4,360,199	1,109,009	111,020	569,805	4,546,816	3,022,494	13,719,343
<b>BELLINGHAM ECONOMIC AREA</b>							
Shake and shingle	4,535	--	--	1,488	--	7,627	13,650
Sawmills <sup>2</sup>							
D	2,850	--	130	260	110	12,570	15,920
C	13,678	--	1,300	8,196	--	19,785	42,959
B	--	--	--	--	--	--	--
A	--	--	--	--	--	--	--
Total	16,528	--	1,430	8,456	110	32,355	58,879
Veneer	--	--	--	--	--	--	--
Veneer and plywood <sup>3</sup>	46,429	--	--	7,460	4,000	365	58,254
Pulp	60,163	--	1,000	17,033	34,065	71,435	183,696
Total	127,655	--	2,430	34,437	38,175	111,782	314,479
<b>PORT ANGELES ECONOMIC AREA</b>							
Shake and shingle	1,363	--	--	2,331	150	25,920	29,764
Sawmills <sup>2</sup>							
D	90	--	576	4,151	20	12,703	17,540
C	--	--	--	--	--	--	--
B	--	--	--	--	--	--	--
A	12,000	--	--	13,500	1,500	3,000	30,000
Total	12,090	--	576	17,651	1,520	15,703	47,540
Veneer	--	--	--	10,000	--	--	10,000
Veneer and plywood <sup>3</sup>	15,900	--	--	9,937	1,987	11,925	39,749
Pulp	21,439	--	5,220	26,396	128,029	46,626	227,710
Total	50,792	--	5,796	66,315	131,686	100,174	354,763

See footnotes at end of table.

continued

**Table 11. — Volume of logs used from each ownership source, by type of plant and economic area, Douglas-fir region, 1966 (continued)**  
(Thousand board feet, Scribner log rule)

Plant type	National Forest Administration	Bureau of Land Management	Bureau of Indian Affairs	State	Company owned	Other private <sup>1</sup>	Total
<b>SEATTLE ECONOMIC AREA</b>							
Shake and shingle	3,375	--	--	875	--	1,050	5,300
Sawmills <sup>2</sup>							
D	10,828	--	11	5,580	4,962	37,324	58,705
C	32,404	--	--	6,657	2,400	17,180	58,641
B	75,000	--	2,000	12,000	18,000	17,000	124,000
A	38,690	--	900	7,200	391,000	14,210	452,000
Total	156,922	--	2,911	31,437	416,362	85,714	693,346
Veneer	--	--	--	--	--	3,080	3,080
Veneer and plywood <sup>3</sup>	47,216	--	--	4,200	39,822	18,677	109,915
Pulp	70,276	--	--	25,702	175,580	52,281	323,839
Total	277,789	--	2,911	62,214	631,764	160,802	1,135,480
<b>TACOMA ECONOMIC AREA</b>							
Shake and shingle	358	--	4,125	3,995	--	5,030	13,508
Sawmills <sup>2</sup>							
D	350	--	620	5,810	1,620	37,194	45,594
C	69,601	--	3,600	8,270	9,443	53,067	143,981
B	20,950	--	--	16,820	60,290	42,740	140,800
A	116,044	--	--	4,960	48,695	24,575	194,274
Total	206,945	--	4,220	35,860	120,048	157,576	524,649
Veneer	97,800	--	--	13,720	18,250	4,430	134,200
Veneer and plywood <sup>3</sup>	67,603	3,000	--	33,466	26,133	16,016	146,218
Pulp	31,191	--	--	5,805	61,718	17,386	116,100
Total	403,897	3,000	8,345	92,846	226,149	200,438	934,675
<b>ABERDEEN ECONOMIC AREA</b>							
Shake and shingle	3,374	--	11,428	740	10,973	19,803	46,318
Sawmills <sup>2</sup>							
D	500	--	--	3,000	500	6,040	10,040
C	--	--	1,443	--	--	17,375	18,818
B	5,400	--	--	8,100	--	13,500	27,000
A	52,250	--	--	12,302	144,400	28,656	237,608
Total	58,150	--	1,443	23,402	144,900	65,571	293,466
Veneer	--	--	--	--	--	--	--
Veneer and plywood <sup>3</sup>	24,970	--	4,563	5,910	1,130	22,040	58,613
Pulp	11,213	--	28,180	14,371	120,312	26,713	200,789
Total	97,707	--	45,614	44,423	277,315	134,127	599,186

See footnotes at end of table.

continued



**Table 11. — Volume of logs used from each ownership source, by type of plant and economic area, Douglas-fir region, 1966 (continued)**  
(Thousand board feet, Scribner log rule)

Plant type	National Forest Administration	Bureau of Land Management	Bureau of Indian Affairs	State	Company owned	Other private <sup>1</sup>	Total
<b>LONGVIEW ECONOMIC AREA</b>							
Shake and shingle	41	--	--	21	--	8,246	8,308
Sawmills <sup>2</sup>							
D	6,960	480	--	1,570	1,480	18,360	28,850
C	12,000	--	--	2,442	269	7,018	21,729
B	10,472	--	--	13,962	--	10,472	34,906
A	14,088	--	--	16,500	305,702	27,500	363,790
Total	43,520	480	--	34,474	307,451	63,350	449,275
Veneer	--	--	--	--	--	--	--
Veneer and plywood <sup>3</sup>	6,491	--	--	5,397	79,870	3,063	94,821
Pulp	2,731	--	--	8,192	85,583	45,862	142,368
Total	52,783	480	--	48,084	472,904	120,521	694,772
<b>ASTORIA ECONOMIC AREA</b>							
Shake and shingle	--	--	--	--	--	1,878	1,878
Sawmills <sup>2</sup>							
D	--	--	--	2,000	400	10,059	12,459
C	--	--	--	--	--	11,000	11,000
B	1,844	6,268	--	8,998	--	90,433	107,543
A	5,143	--	--	9,601	--	19,545	34,289
Total	6,987	6,268	--	20,599	400	131,037	165,291
Veneer	--	--	--	--	--	--	--
Veneer and plywood <sup>3</sup>	25,485	15,484	--	14,399	5,823	33,341	94,532
Pulp	--	--	--	--	--	--	--
Total	32,472	21,752	--	34,998	6,223	166,256	261,701
<b>PORTLAND ECONOMIC AREA</b>							
Shake and shingle	13	--	--	--	6	104	123
Sawmills <sup>2</sup>							
D	27,859	1,600	--	--	5,502	30,215	65,176
C	71,995	6,997	2,600	4,537	13,738	91,372	191,239
B	108,314	20,574	--	11,470	14,176	63,507	218,041
A	212,697	6,440	--	15,590	81,207	110,825	426,759
Total	420,865	35,611	2,600	31,597	114,623	295,919	901,215
Veneer	43,678	6,525	--	4,935	10,715	12,302	78,155
Veneer and plywood <sup>3</sup>	132,239	12,200	1,250	18,645	36,978	64,492	265,804
Pulp	19,175	8,222	--	14,965	151,625	37,042	231,029
Total	615,970	62,558	3,850	70,142	313,947	409,859	1,476,326

See footnotes at end of table.

continued

**Table 11. — Volume of logs used from each ownership source, by type of plant  
and economic area, Douglas-fir region, 1966 (continued)**  
(Thousand board feet, Scribner log rule)

Plant type	National Forest Administration	Bureau of Land Management	Bureau of Indian Affairs	State	Company owned	Other private <sup>1</sup>	Total
<b>SALEM ECONOMIC AREA</b>							
Shake and shingle	--	--	--	--	--	--	--
Sawmills <sup>2</sup>							
D	--	--	--	--	1,527	2,673	4,200
C	3,000	3,000	--	4,150	861	29,505	40,516
B	103,986	27,350	--	4,990	1,190	42,507	180,023
A	5,650	13,560	--	--	23,730	13,560	56,500
Total	112,636	43,910	--	9,140	27,308	88,245	281,239
Veneer	15,761	--	--	--	1,065	9,690	26,516
Veneer and plywood <sup>3</sup>	40,442	28,961	--	3,568	43,960	49,485	166,416
Pulp	--	--	--	--	--	--	--
Total	168,839	72,871	--	12,708	72,333	147,420	474,171
<b>CORVALLIS ECONOMIC AREA</b>							
Shake and shingle	--	--	--	--	--	--	--
Sawmills <sup>2</sup>							
D	1,476	206	--	425	--	16,257	18,364
C	54,275	19,941	--	1,752	8,718	20,192	104,878
B	33,345	20,116	--	--	7,304	24,295	85,060
A	73,317	39,479	--	4,510	54,402	51,784	223,492
Total	162,413	79,742	--	6,687	70,424	112,528	431,794
Veneer	47,049	34,225	--	4,250	9,785	7,815	103,124
Veneer and plywood <sup>3</sup>	47,278	29,212	--	1,797	168,148	42,899	289,334
Pulp	--	--	--	--	--	--	--
Total	256,740	143,179	--	12,734	248,357	163,242	824,252
<b>EUGENE ECONOMIC AREA</b>							
Shake and shingle	3,600	1,800	--	--	--	3,600	9,000
Sawmills <sup>2</sup>							
D	3,350	6,550	--	--	3,300	9,875	23,075
C	97,891	38,036	--	489	1,700	25,149	163,265
B	113,994	51,524	--	1,200	1,540	51,155	219,413
A	143,856	18,988	--	3,744	294,427	33,650	494,665
Total	359,091	115,098	--	5,433	300,967	119,829	900,418
Veneer	171,108	20,609	--	--	16,425	32,016	240,158
Veneer and plywood <sup>3</sup>	229,132	77,324	--	275	211,326	26,152	544,209
Pulp	--	--	--	--	--	--	--
Total	762,931	214,831	--	5,708	528,718	181,597	1,693,785

See footnotes at end of table.

continued

**Table 11. — Volume of logs used from each ownership source, by type of plant and economic area, Douglas-fir region, 1966 (continued)**  
(Thousand board feet, Scribner log rule)

Plant type	National Forest Administration	Bureau of Land Management	Bureau of Indian Affairs	State	Company owned	Other private <sup>1</sup>	Total
<b>ROSEBURG ECONOMIC AREA</b>							
Shake and shingle	--	--	--	--	--	--	--
Sawmills <sup>2</sup>							
D	--	1,444	--	614	666	6,028	8,752
C	38,377	14,252	--	--	3,659	28,535	84,823
B	95,546	68,183	--	1,075	48,729	33,719	247,252
A	12,742	31,598	--	--	--	37,260	81,600
Total	146,665	115,477	--	1,689	53,054	105,542	422,427
Veneer	127,083	70,931	--	1,073	37,579	8,700	245,366
Veneer and plywood <sup>3</sup>	67,692	54,940	--	--	83,039	36,235	241,906
Pulp	--	--	--	--	--	--	--
Total	341,440	241,348	--	2,762	173,672	150,477	909,699
<b>COOS BAY ECONOMIC AREA</b>							
Shake and shingle	--	--	--	--	--	--	--
Sawmills <sup>2</sup>							
D	--	633	--	900	--	2,643	4,176
C	1,509	9,100	--	27,167	3,600	4,809	46,185
B	13,588	3,065	--	17,803	71,728	25,018	131,202
A	40,077	36,620	--	20,599	176,247	86,088	359,631
Total	55,174	49,418	--	66,469	251,575	118,558	541,194
Veneer	24,255	10,562	--	1,361	49,258	19,445	104,881
Veneer and plywood <sup>3</sup>	68,827	60,371	--	8,179	234,824	23,898	396,099
Pulp	7,255	3,897	--	3,740	264	47,505	62,661
Total	155,511	124,248	--	79,749	535,921	209,406	1,104,835
<b>MEDFORD ECONOMIC AREA</b>							
Shake and shingle	--	--	--	--	--	--	--
Sawmills <sup>2</sup>							
D	7,600	15,000	--	--	--	10,400	33,000
C	484	10,647	--	--	--	9,468	20,599
B	136,328	63,225	--	--	35,092	43,258	277,903
A	110,775	43,410	--	2,313	21,415	16,954	194,867
Total	255,187	132,282	--	2,313	56,507	80,080	526,369
Veneer	42,277	10,707	--	372	6,490	9,590	69,436
Veneer and plywood <sup>3</sup>	80,225	60,633	--	--	62,470	22,180	225,508
Pulp	--	--	--	--	--	--	--
Total	377,689	203,622	--	2,685	125,467	111,850	821,313

See footnotes at end of table.

continued



Table 11. — Volume of logs used from each ownership source, by type of plant and economic area, Douglas-fir region, 1966 (continued)  
(Thousand board feet, Scribner log rule)

Plant type	National Forest Administration	Bureau of Land Management	Bureau of Indian Affairs	State	Company owned	Other private <sup>1</sup>	Total
EUREKA ECONOMIC AREA							
Shake and shingle	--	--	--	--	--	500	500
Sawmills <sup>2</sup>							
D	--	--	--	--	--	1,500	1,500
C	101,940	8,180	--	--	95,503	82,726	288,349
B	240,966	11,380	10,000	--	137,833	213,400	613,579
A	162,302	1,560	7,000	--	376,146	268,389	815,397
Total	505,208	21,120	17,000	--	609,482	566,015	1,718,825
Veneer	114,274	--	20,437	--	35,577	3,240	173,528
Veneer and plywood <sup>3</sup>	18,502	--	4,637	--	119,126	84,788	227,053
Pulp	--	--	--	--	--	--	--
Total	637,984	21,120	42,074	--	764,185	654,543	2,119,906

<sup>1</sup> Other private timber consists of purchased timber volumes from forest industry lands or other private landowning classes.

<sup>2</sup> Sawmills denoted as follows: class A mills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

<sup>3</sup> Integrated operations producing both veneer and plywood.

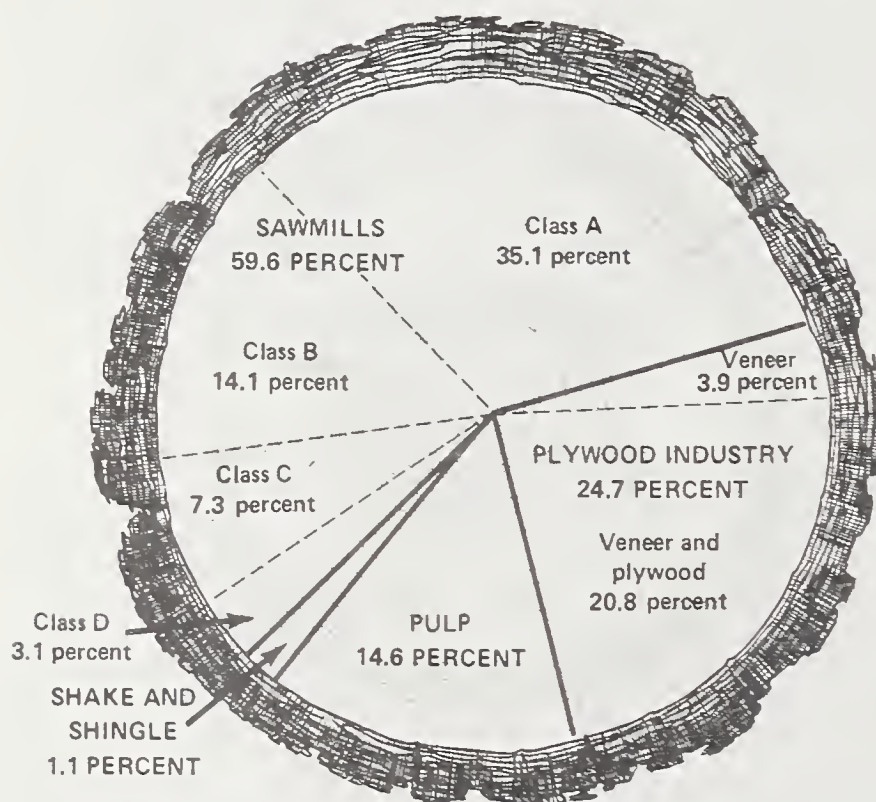


Figure 25. — Use of private timber in domestic production, Douglas-fir region, 1966. Class A sawmills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

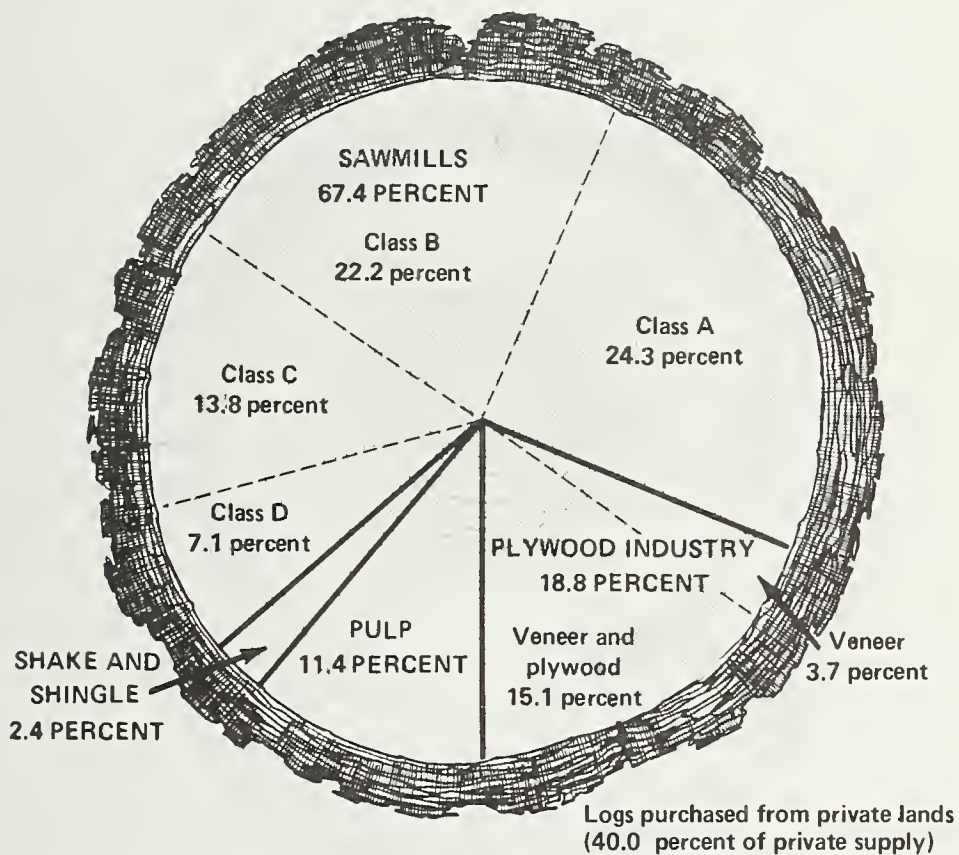
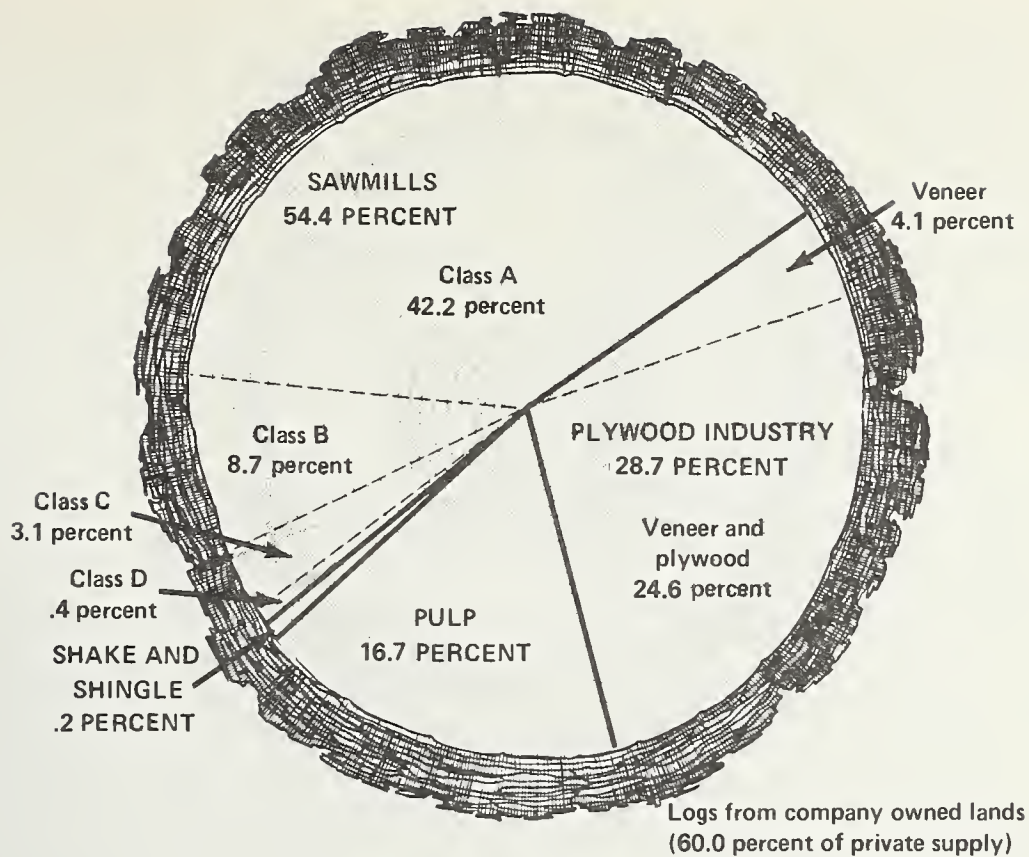


Figure 26. — Use of private logs from company owned lands and purchased logs, Douglas-fir region, 1966. Class A sawmills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.



rated highly dependent on timber-based employment — Astoria, Port Angeles, Longview, and Aberdeen — National Forest logs accounted for less than 17 percent of the logs used. Each of these areas reported consuming less than 100 million board feet of Forest Service logs in 1966. All three of the region's moderately timber-dependent areas, Tacoma, Portland, and Bellingham, reported obtaining over 40 percent of their logs from National Forests.

The region's lumber industry consumed the largest volume of Forest Service logs, accounting for 2,518 million board feet or 47.7 percent of the total, followed by the plywood industry, 36.8 percent, and pulp plants, 5.1 percent (fig. 27). In a study using 1960 data, National Forest log distribution among primary processing facilities was found to be very similar to that obtained here: 61 percent to sawmills, 31 percent to veneer operations, 5 percent to pulp plants, 2 percent to shake and shingle plants, and 1 percent as log exports.<sup>13</sup> Log export volumes are not included in this study because reported volumes are volumes consumed by domestic mills. The major change according to these figures is an increased proportion of National Forest logs being consumed by veneer producers in 1966 and a decreased proportion going to sawmills.

#### **Bureau of Land Management lands contribute 8.1 percent of logs used**

The Bureau of Land Management (BLM), with 7.4 percent of the region's commercial forest land area, supplied 1,109 million board feet of logs, or 8.1 percent of the total logs used by the region's forest industry in 1966. BLM logs were used chiefly by areas in southwest Oregon, where the BLM lands are concentrated. Heaviest consumption was in the Roseburg area, where the forest industry used 241 million board feet, or 21.8 percent of

<sup>13</sup> Mead, Walter J. *Log flow and use from Region 6 National Forests*. 20 pp., illus. 1963 (unpublished manuscript on file at the Pacific Northwest Forest & Range Exp. Sta., Portland, Oreg.).

total BLM logs consumed in the region. This area also obtained a larger portion of its log supply from BLM than did any other area, 26.5 percent. Eugene and Medford were other major consumers of BLM timber.

The plywood industry derived a larger portion of logs from the Bureau than from any other ownership, accounting for 44.7 percent of all BLM timber; sawmills consumed 54.0 percent of the Bureau's supply and pulp plants, 1.1 percent (fig. 28).

#### **Indian lands supplied less than 1 percent of logs consumed in region**

Lands managed by the Bureau of Indian Affairs (BIA) contributed 111 million board feet of timber in 1966, 0.8 percent of the total volume of logs consumed in the region. Indian lands, like those managed by BLM, are geographically concentrated with the largest block holdings located on the Quinault Indian Reservation in the Aberdeen economic area and the Hoopa Valley Indian Reservation in the Eureka economic area. These two areas were the largest consumers of Indian timber. The region's pulp operations were the major consumers of BIA timber, accounting for 31.0 percent of the total (fig. 29).

#### **State-owned logs account for 4.2 percent of logs used in region**

The region's forest industries used 569.8 million board feet of State-owned timber, 4.2 percent of the region's total timber consumption in 1966. Sawmills used 51.8 percent of State-supplied logs; the plywood industry, 26.2 percent; and pulp plants, 20.4 percent (fig. 30).

The Tacoma area in Washington and the Coos Bay area in Oregon were the major consumers of State timber. No logs from State lands were reported consumed by the forest industry in the Eureka area of northern California. State logs were most important to the Port Angeles forest industry, where they represented 18.7 percent of all logs used.



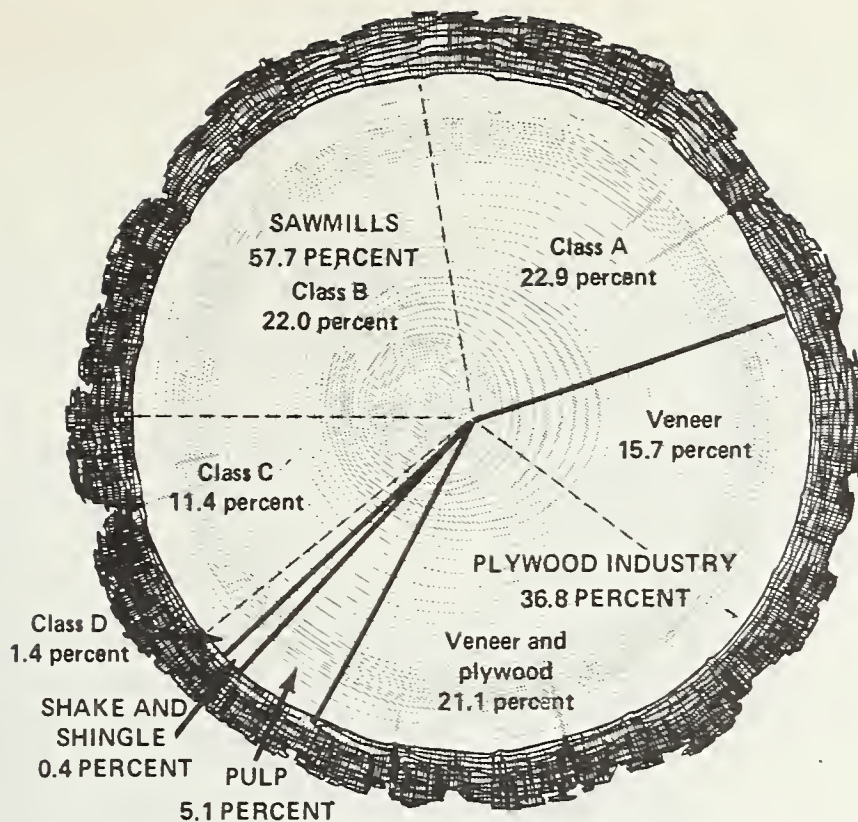


Figure 27. — Use of National Forest timber in domestic production, Douglas-fir region, 1966. Class A sawmills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

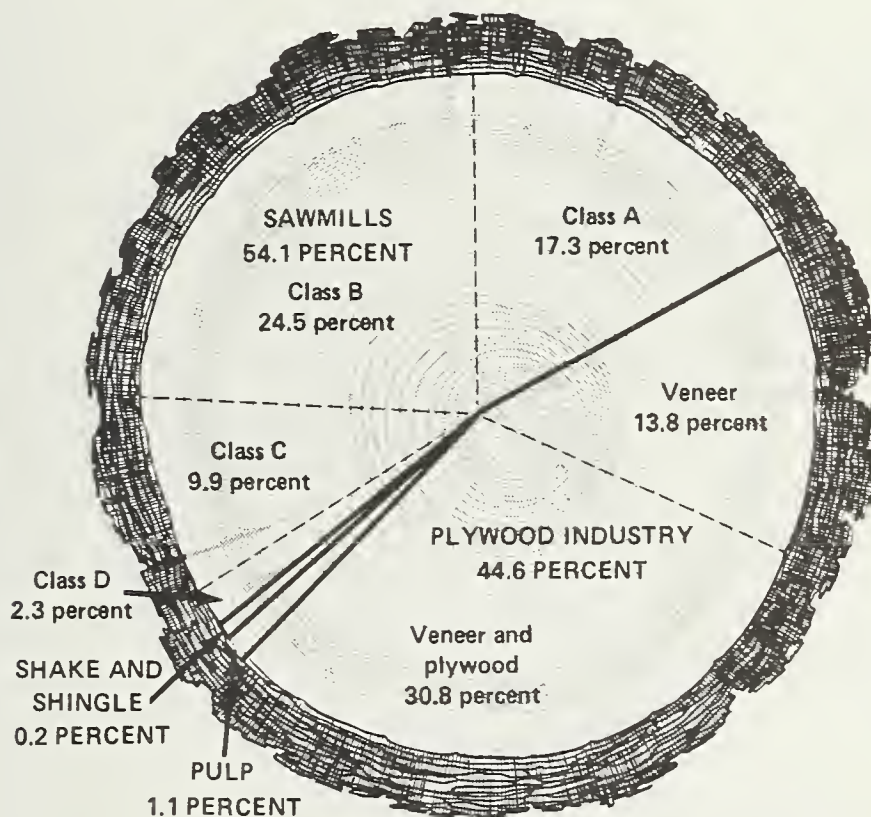


Figure 28. — Use of Bureau of Land Management timber in domestic production, Douglas-fir region, 1966. Class A sawmills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

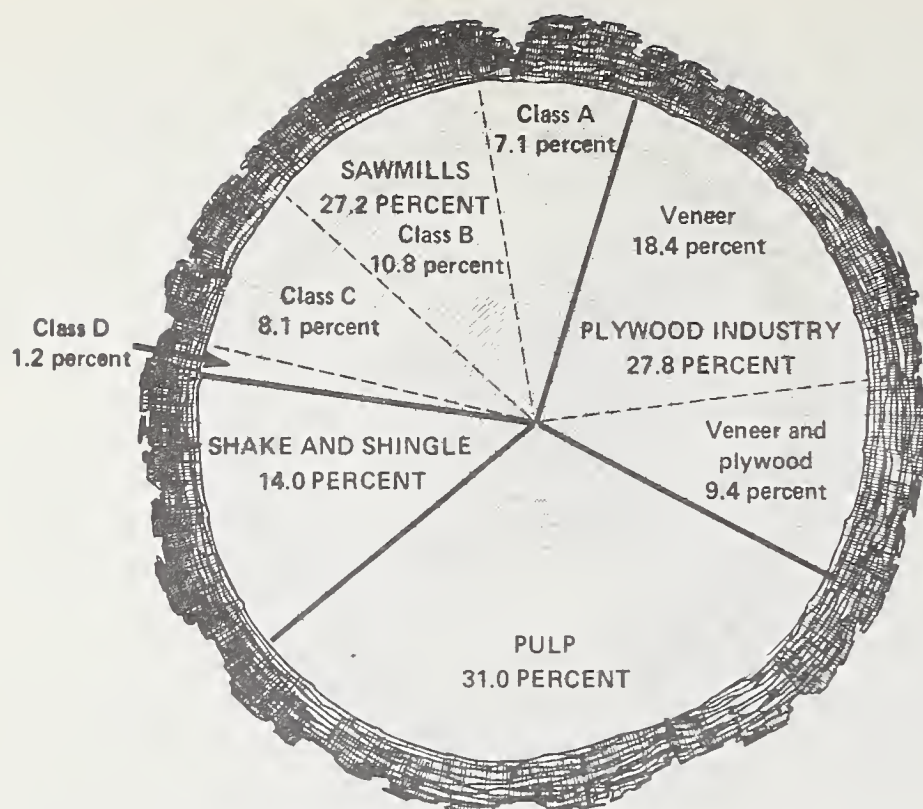


Figure 29. — Use of Bureau of Indian Affairs timber in domestic production, Douglas-fir region, 1966. Class A sawmills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

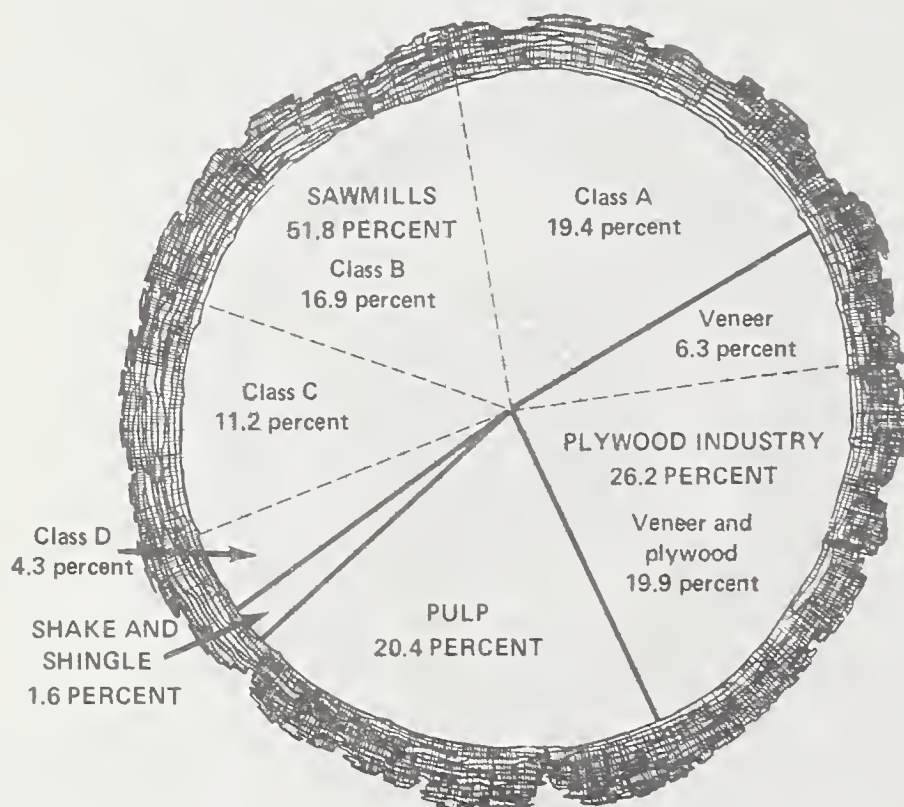


Figure 30. — Use of State timber in domestic production, Douglas-fir region, 1966. Class A sawmills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.



# SUPPLY SOURCES FOR THE REGION'S FOREST INDUSTRIES

Sawmill industry obtains over half its timber supply from private lands

The sawmill industry obtained 56.7 percent of its logs from private lands in 1966, 31.1 percent from company lands, and 25.6 percent from other private sources, (fig. 31). The National Forests supplied 31.7 percent of the industry's logs, Bureau of Land Management furnished 7.5 percent, and Indian lands 0.4 percent, for a total of 39.6 percent from

Federal lands. In a survey by the Western Wood Product Association's Market Research Department in 1965 covering 90 percent of the western production of 1964, sawmills in western Oregon and western Washington reported obtaining 41.9 percent of their timber from Federal lands and 32.0 percent from company-owned lands.<sup>14</sup>

<sup>14</sup> Western Wood Products Association. *Profile of western sawmills*. 13 pp. Portland, Oreg. 1966.

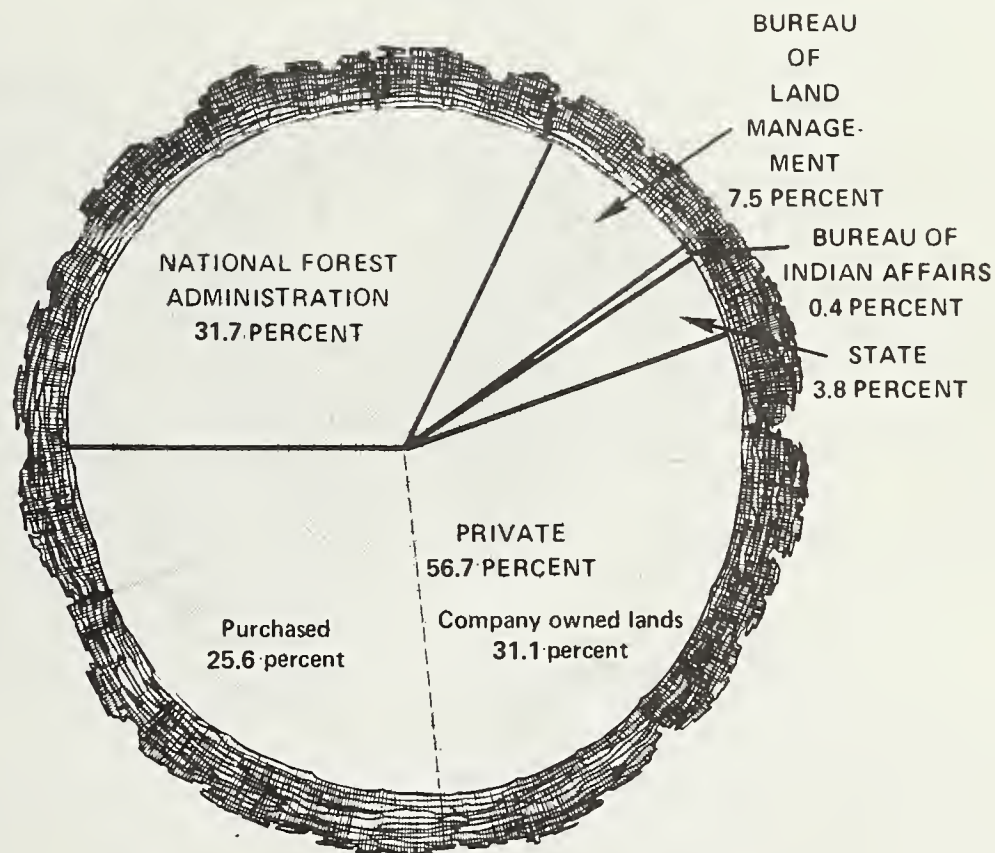


Figure 31. — Source of timber supply for sawmills, Douglas-fir region, 1966.



A 1969 report by the same association shows Federal lands providing sawmills with 39.6 percent of their timber and company owned lands, 34.0 percent in 1968.<sup>15</sup> This last report represented about 85 percent of the region's lumber production capacity.

Private supply was the source for more than 50 percent of the log requirements for sawmills in seven of the region's 15 areas. Consumption of logs by plant type for each economic area is given in table 11. Bellingham and Tacoma were the only areas in Washington that obtained less than 50 percent of their saw logs from private lands, and Astoria, Coos Bay, and Eureka were the only areas outside Washington receiving 50 percent or more of their saw logs from this source.

The Longview area sawmill industry's log supply contained the greatest portion of private logs, over 80 percent, and the Medford area had the smallest portion, about 25 percent.

Sawmill classes B and C relied more heavily on Forest Service and Bureau of Land Management stumpage than did the small class D and the large class A sawmills (fig. 32). Also, although private timber furnished almost half the supply for all sawmill classes, the proportion of purchased private timber to the total increased as mill size decreased. Smaller sawmills do not as a rule have extensive land holdings from which to supply their operations and consequently rely on purchased logs. Private timber is more often sought by these smaller operations because many of the public sales are too large or contain road construction requirements not manageable by the small firm.

#### Federal lands furnish over half of plywood industry's logs

The plywood industry obtained 51.4 percent of its 1966 veneer log supply from Federal lands, 38.6 percent from National Forest lands, 12.0 percent from Bureau of Land Management lands, and 0.8 percent from In-

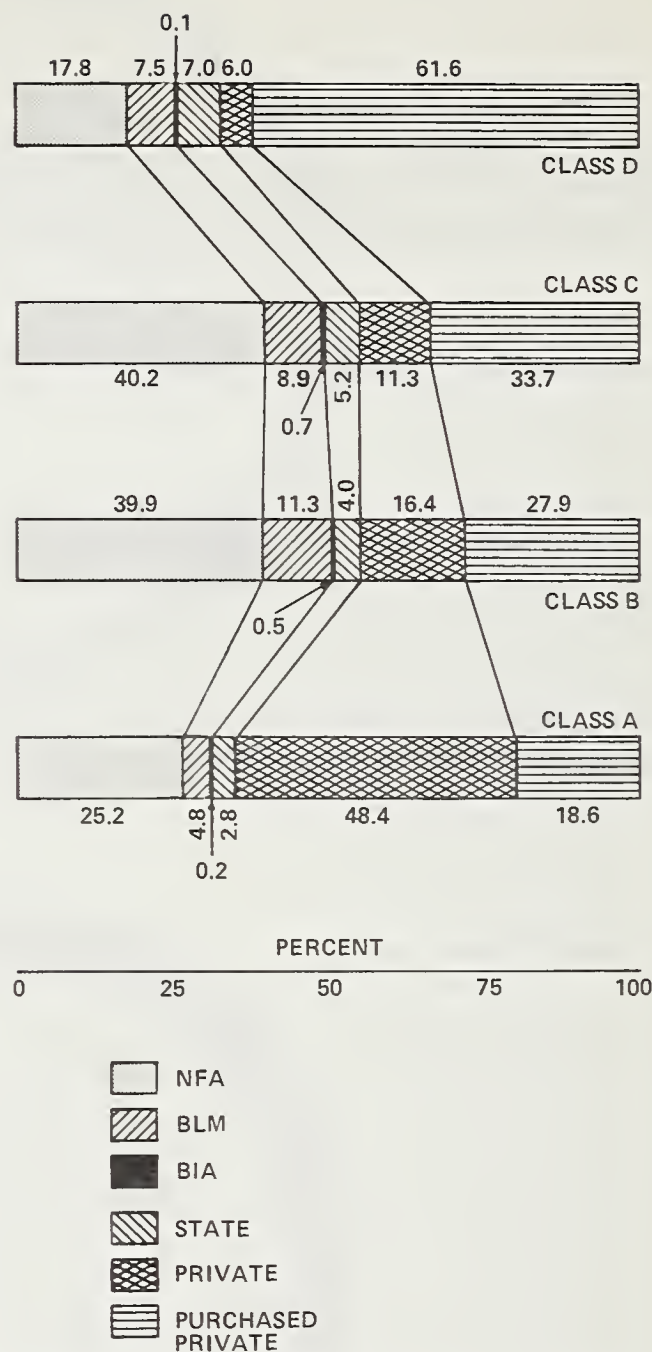


Figure 32. — Percent of logs used from each ownership class by sawmill class, Douglas-fir region, 1966. Class A sawmills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

<sup>15</sup> Western Wood Products Association. 1968 statistical supplement to facts. 27 pp. Portland, Oreg. 1969.

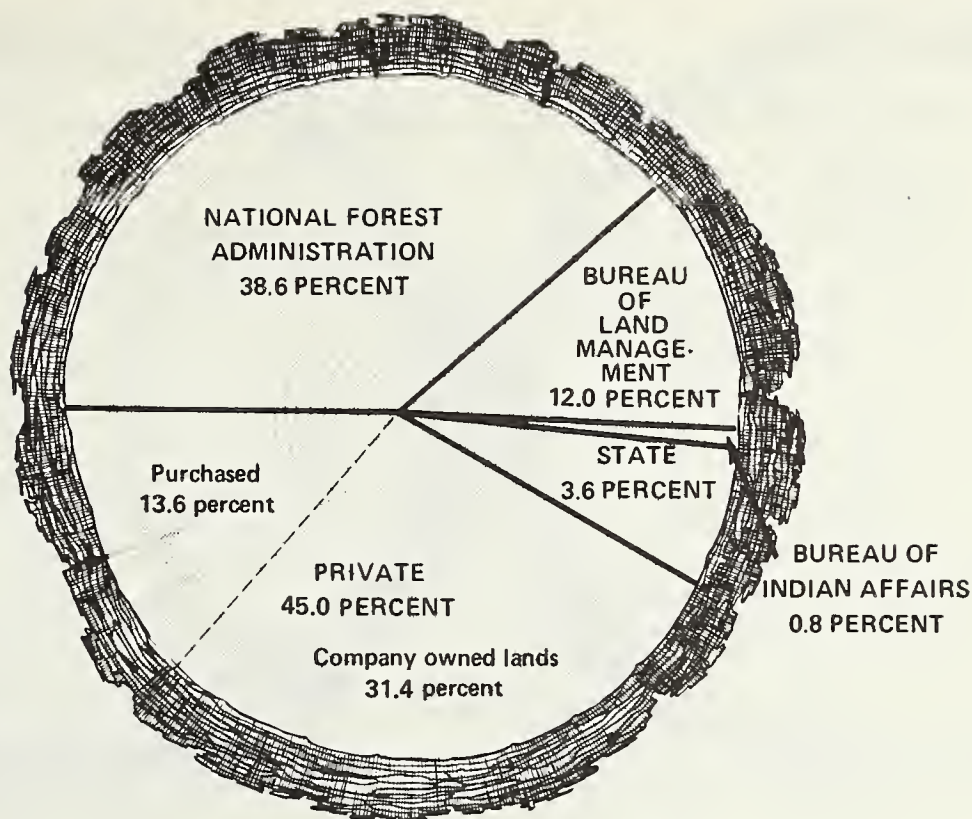


Figure 33. — Source of timber supply for the plywood industry, Douglas-fir region, 1966.

dian lands. Private sources furnished 45.0 percent of the industry's logs, 31.4 percent from the mills' own lands (fig. 33).

Veneer plants obtained a much larger portion, over 70 percent, of their log supply from Federal lands than did the integrated veneer and plywood operations which produce both veneer and plywood (fig. 34). The integrated operations, which obtained only 43 percent from Federal lands and over 53 percent from private lands, tend to be the larger, landowning companies. This accounts for the difference in portions of timber coming from company owned lands: 16 percent for veneer plants versus 38 percent for the integrated plants.

#### Pulp plants obtain 74 percent of roundwood from private lands

The pulp industry obtained 50.9 percent of its roundwood needs from its own lands and another 23.2 percent from other private

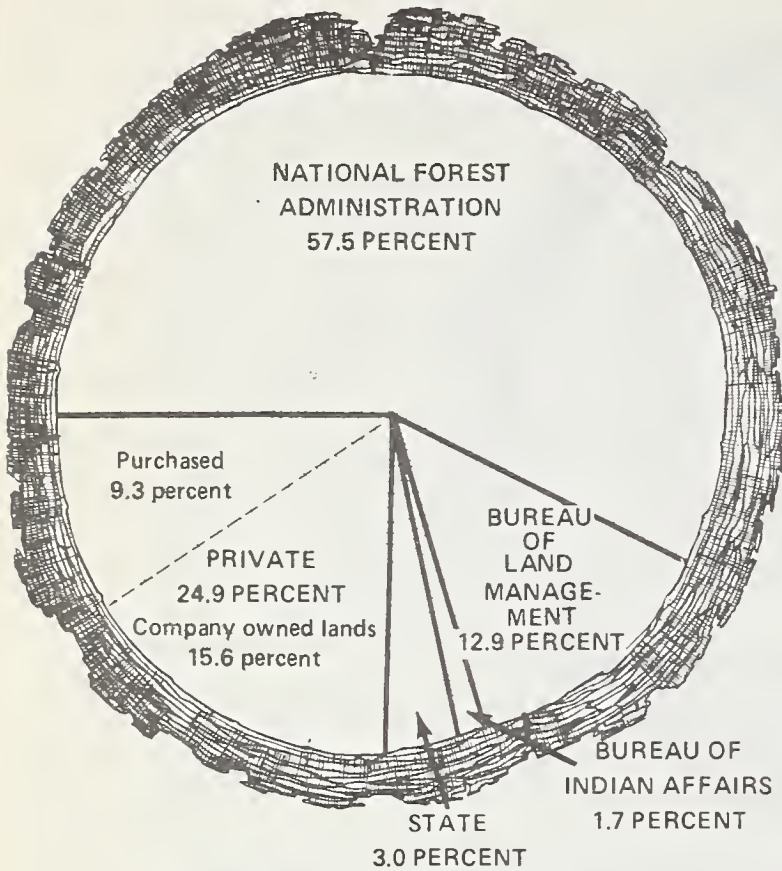
sources, for a total from private lands of 74.1 percent or 1,102 million board feet (fig. 35). Federal timber accounted for only 18.1 percent of the total and State lands, 7.8 percent. Because of the geographical location of BLM lands away from the pulp-making centers in the region, only 0.8 percent of the industry's logs came from this source. Of the eight economic areas reporting log consumption by pulp plants, six of the areas obtained over 70.0 percent of their pulp log requirements from private lands.

#### Shake and shingle plants rely heavily on private timber

Shake and shingle plants used private logs for 66 percent of their timber requirements, but only 9 percent came from land owned by these firms. National Forests furnished 13.0 percent of these plants' timber requirements, and the Bureau of Indian Affairs furnished 12.1 percent.



## VENEER PLANTS



## VENEER AND PLYWOOD PLANTS

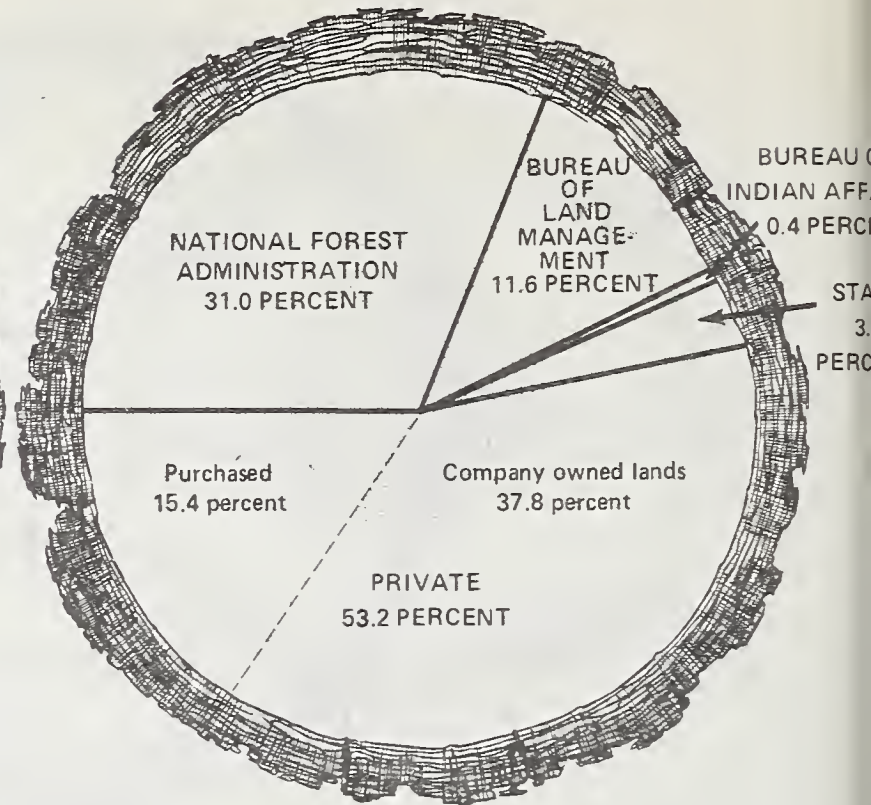


Figure 34. — Source of timber supply for veneer and veneer and plywood plants, Douglas-fir region, 1966.

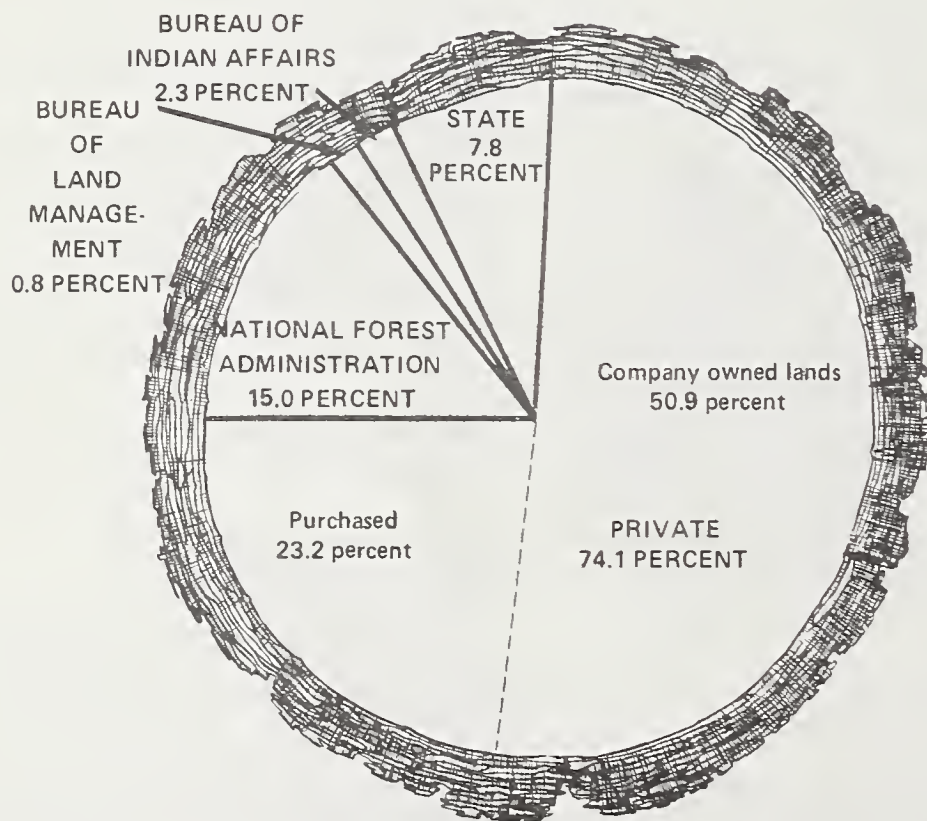


Figure 35. — Source of timber supply for pulp mills, Douglas-fir region, 1966.



# NATIONAL FOREST LOG MARKETS

---

The National Forest System furnishes almost a third of the timber supply used by the region's forest industry, and in many areas National Forest logs are the backbone of the forest industry. Because of the importance of the National Forests to the region's timber economy, the markets for each of the region's National Forests are discussed below.

Each National Forest in the region has a certain geographical market for its logs. This market is largely determined by the Forests' proximity to good road or water transportation systems and timber composition. The Forests are considered in order of their contributions to the region's timber supply.

The Willamette National Forest supplied a larger volume of logs to the region's forest industry than any other single Forest in 1966, 890.6 million board feet, or 20.4 percent of all Forest Service logs used (table 12, fig. 36). The Willamette Valley was the Forest's major market with the Eugene area consuming 588.3 million board feet, or 66 percent of the total. The Corvallis and Salem areas were also important markets for the Willamette timber with a small amount going to the Portland and Tacoma areas.

In total, 50.7 percent of the Willamette timber volume was utilized by the plywood industry and 49.0 percent by the lumber industry; shake and shingle mills accounted for the remainder. The Willamette National Forest furnished integrated veneer and plywood operations almost 2½ times as much timber and sawmills over twice as much timber as any other National Forest in the region. No Willamette National Forest logs were reported as used directly by the pulp industry in 1966.

The Gifford Pinchot National Forest supplied 467.3 million board feet of logs to the region's forest industry in 1966, 10.7 percent of total National Forest volume used in the region. The Forest is the region's second largest supplier of National Forest logs and has one of the widest market areas in the region; however, its main markets lie in the geographic area between Tacoma and Portland.

The Portland economic area alone accounted for 232.3 million board feet, or about half the volume supplied by the Gifford Pinchot in 1966. The Tacoma area was the second largest market for the Forest's logs, followed by the Longview, Seattle, and Astoria areas.

Lumber mills used 57 percent, plywood plants 39 percent, and pulp plants 4 percent of the Forest's logs. The Gifford Pinchot National Forest supplied the small class D sawmills with almost twice as much timber as any other National Forest in the region.

The Umpqua National Forest was the region's third largest supplier of National Forest logs in 1966, 453.1 million board feet or 10.4 percent of the total. The areas of Roseburg, Medford, and Eugene are the major markets for the Forest's logs with the Roseburg area using 341.4 million board feet or over 75 percent of the total. The lumber industry, mainly Roseburg's class B sawmills, used 45 percent of the Forest's logs, veneer mills used 31 percent, and integrated plywood plants 24 percent. No Umpqua National Forest logs were reported as used directly by pulpmills.

The Siuslaw National Forest supplied the region's forest industry with 342.2 million board feet of logs in 1966, 7.8 percent of the total from Forest Service lands. The markets for this Forest's timber stretch from Portland and Astoria to Coos Bay, covering all of western Oregon except the southwest corner of the State. The economic areas of Eugene and Corvallis were the Forest's major log markets, using 120.7 and 97.1 million board feet, respectively. The lumber industry was the Forest's major log buyer, using 68.1 percent of the total volume.

The Mount Hood National Forest supplied 320.9 million board feet of timber to its market, mainly the lower Willamette Valley. The Portland area's forest industry used 305.5 million board feet of the Forest's logs, over 95 percent of the total. Over 77 percent of the Forest's logs went to the region's lumber industry.

The Olympic National Forest supplied the forest industry in northwest Washington with

Table 12. — Use of National Forest logs in the Douglas-fir region, by economic area and type of plant, 1966  
(Thousand board feet, Scribner log rule)

National Forest of log origin and economic area of utilization	Type of plant									
	Shake and shingle	Sawmills <sup>1</sup>				Veneer	Veneer and plywood <sup>2</sup>	Pulp	Total	
		D	C	B	A					Total
DESCHUTES NATIONAL FOREST										
Portland	--	--	--	--	--	--	1,600	--	--	1,600
FREMONT NATIONAL FOREST										
Eugene	--	--	--	--	--	--	1,800	--	--	1,800
GIFFORD PINCHOT NATIONAL FOREST										
Seattle	--	--	--	--	--	--	--	--	--	12,059
Tacoma	124	350	55,537	5,770	29,700	91,357	43,420	4,000	--	162,311
Longview	41	6,960	12,000	10,472	14,088	43,520	--	2,731	--	52,783
Astoria	--	--	--	--	--	--	--	--	--	7,820
Portland	13	15,587	2,990	18,481	94,322	131,380	24,058	12,375	--	232,334
Total Gifford Pinchot	178	22,897	70,527	34,723	138,110	266,257	67,478	19,106	--	467,307
KLAMATH NATIONAL FOREST										
Medford	--	2,800	--	12,100	8,564	23,464	2,828	--	--	26,292
Eureka	--	--	7,650	133,443	37,629	178,722	44,167	4,691	--	227,580
Total Klamath	--	2,800	7,650	145,543	46,193	202,186	46,995	--	--	253,872
MOUNT BAKER NATIONAL FOREST										
Seattle	2,625	4,200	14,977	55,000	7,200	81,377	--	50,560	--	142,962
Bellingham	4,535	2,850	13,678	--	--	16,528	--	49,467	--	98,959
Port Angeles	--	--	--	--	--	--	--	--	--	795
Tacoma	--	--	--	--	2,627	2,627	--	--	--	3,472
Total Mount Baker	7,160	7,050	28,655	55,000	9,827	100,532	--	100,027	--	246,188
MOUNT HOOD NATIONAL FOREST										
Astoria	--	--	--	--	--	--	--	--	--	5,213
Portland	--	12,272	52,397	59,510	116,125	240,304	17,160	6,800	--	305,541
Salem	--	--	--	7,373	--	7,373	2,130	--	--	9,503
Corvallis	--	--	--	--	--	--	--	--	--	599
Total Mount Hood	--	12,272	52,397	66,883	116,125	247,677	19,290	6,800	--	320,856

See footnotes at end of table, p. 64.



Table 12. — Use of National Forest logs in the Douglas-fir region, by economic area and type of plant, 1966 (continued)  
(Thousand board feet, Scribner log rule)

National Forest of log origin and economic area of utilization	Shake and shingle	Type of plant						Veneer	Veneer and plywood <sup>2</sup>	Pulp	Total	
		Sawmills <sup>1</sup>				Total						
		D	C	B	A							
OKANOGAN NATIONAL FOREST												
Seattle	--	--	--	--	1,350	1,350	--	--	--	--	1,350	
OLYMPIC NATIONAL FOREST												
Seattle	--	--	4,970	--	13,500	18,470	--	8,397	--	--	26,867	
Bellingham	--	--	--	--	--	--	--	8,000	--	--	8,000	
Port Angeles	1,363	90	--	--	12,000	12,090	--	15,105	21,439	--	49,997	
Tacoma	--	--	--	1,580	76,357	77,937	--	--	3,971	--	114,408	
Aberdeen	3,374	500	--	5,400	52,250	58,150	--	24,970	11,213	--	97,707	
Total Olympic	4,737	590	4,970	6,980	154,107	166,647	32,500	56,472	36,623	--	296,979	
ROGUE RIVER NATIONAL FOREST												
Medford	--	--	242	106,199	13,954	120,395	31,539	53,517	--	--	205,451	
SHASTA-TRINITY NATIONAL FOREST												
Eureka	--	--	68,135	66,449	53,553	188,137	7,320	2,007	--	--	197,464	
SISKIYOU NATIONAL FOREST												
Portland	--	--	--	--	--	--	--	3,200	--	--	3,200	
Coos Bay	--	--	--	13,588	35,499	49,087	24,255	68,299	5,649	--	147,290	
Medford	--	600	242	4,579	47,852	53,273	--	11,750	--	--	65,023	
Eureka	--	--	--	--	--	--	1,873	2,063	--	--	3,936	
Total Siskiyou	--	600	242	18,167	83,351	102,360	26,128	85,312	5,649	--	219,449	
SIUSLAW NATIONAL FOREST												
Astoria	--	--	--	1,844	5,143	6,987	--	12,452	--	--	19,439	
Portland	--	--	16,608	30,323	--	46,931	2,460	12,054	--	--	61,445	
Salem	--	--	--	22,417	5,650	28,067	--	7,168	--	--	35,235	
Corvallis	--	1,102	35,371	17,345	28,729	82,547	14,600	--	--	--	97,147	
Eugene	1,350	--	6,713	32,780	22,776	62,269	34,901	22,171	--	--	120,691	
Coos Bay	--	--	1,509	--	4,578	6,087	--	528	1,606	--	8,221	
Total Siuslaw	1,350	1,102	60,201	104,709	66,876	232,888	51,961	54,373	1,606	--	342,178	
SIX RIVERS NATIONAL FOREST												
Medford	--	--	--	--	800	800	--	--	--	--	800	
Eureka	--	--	26,155	41,074	71,120	138,349	60,914	9,741	--	--	209,004	
Total Six Rivers	--	--	26,155	41,074	71,920	139,149	60,914	9,741	--	--	209,804	

See footnotes at end of table, p. 64.



Table 12. — Use of National Forest logs in the Douglas-fir region, by economic area and type of plant, 1966 (continued)  
(Thousand board feet, Scribner log rule)

National Forest of log origin and economic area of utilization	Shake and shingle	Type of plant							Veneer	Veneer and plywood <sup>2</sup>	Pulp	Total
		Sawmills <sup>1</sup>				Total						
		D	C	B	A							
SNOQUALMIE NATIONAL FOREST												
Seattle	600	1,695	11,257	16,400	12,990	42,342	--	17,990	19,716	80,648		
Bellingham	--	--	--	--	--	--	--	10,000	10,696	20,696		
Tacoma	234	--	14,064	13,600	7,360	35,024	21,880	34,348	23,220	114,706		
Total Snoqualmie	834	1,695	25,321	30,000	20,350	77,366	21,880	62,338	53,632	216,050		
UMPUQUA NATIONAL FOREST												
Portland	--	--	--	--	--	--	--	1,600	--	1,600		
Eugene	--	--	10,429	8,982	--	19,411	8,568	24,186	--	52,165		
Roseburg	--	--	38,377	95,546	12,742	146,665	127,083	67,692	--	341,440		
Medford	--	--	--	550	38,466	39,016	5,012	13,858	--	57,886		
Total Umpqua	--	--	48,806	105,078	51,208	205,092	140,663	107,336	--	453,091		
WENATCHEE NATIONAL FOREST												
Seattle	150	4,933	1,200	3,600	3,650	13,383	--	370	--	13,903		
WILLAMETTE NATIONAL FOREST												
Tacoma	--	--	--	--	--	--	--	9,000	--	9,000		
Portland	--	--	--	--	2,250	2,250	--	8,000	--	10,250		
Salem	--	--	3,000	74,196	--	77,196	13,631	33,274	--	124,101		
Corvallis	--	374	18,904	16,000	44,588	79,866	32,449	46,679	--	158,994		
Eugene	2,250	3,350	80,749	72,232	121,080	277,411	125,839	182,775	--	588,275		
Total Willamette	2,250	3,724	102,653	162,428	167,918	436,723	171,919	279,728	--	890,620		
WINEMA NATIONAL FOREST												
Medford	--	4,200	--	12,900	1,139	18,239	2,898	1,100	--	22,237		
TOTAL, ALL FORESTS												
	16,659	61,863	497,154	959,733	999,631	2,518,381	683,285	918,431	223,443	4,360,199		

<sup>1</sup> Sawmills denoted as follows: class A mills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

<sup>2</sup> Integrated operations producing both veneer and plywood.

297.0 million board feet of logs. The Tacoma and Aberdeen economic areas were the Forest's main markets with small volumes also going to the Port Angeles, Seattle, and Bellingham areas.

The lumber industry used 56 percent, the plywood industry 30 percent, and the pulp industry 12 percent of the Forest's logs. Shake and shingle plants made up the remaining 2 percent.

Class A mills accounted for over 90 percent of the logs used by the lumber industry.

The Klamath National Forest supplied 253.9 million board feet, mainly to the Eureka economic area. The Medford forest industry also used some of the Forest's logs. Sawmills, mainly the class B mills in the Eureka area, used 202.2 million board feet or 79.6 percent of the total.

The Mount Baker National Forest in northwest Washington furnished 246.2 million board feet to the region's forest industry. The Puget Sound portion of the region was the Forest's major market, with the Seattle economic area accounting for 58.1 percent of the total, Bellingham 40.2 percent, and Tacoma and Port Angeles the remainder. The Mount Baker National Forest supplied 100.0 million board feet, or 40.6 percent of its total volume, to the pulp industry. This is almost twice as much as any other Forest in the region furnished to pulp operations.

The Siskiyou National Forest supplied 219.4 million board feet of logs mainly to the areas in southwest Oregon. A few of the Forest's logs found their way north to the Portland economic area.

The areas around the lower Puget Sound were supplied 216.0 million board feet from the Snoqualmie National Forest with the Tacoma area forest industry consuming over half of this volume. Eureka received 209.0 million board feet of the 209.8 million board feet supplied by the Six Rivers National Forest, used mainly in lumber production. The Rogue River National Forest supplied 205.4 million board feet, all to the Medford economic area, and the Shasta-Trinity National Forest supplied the forest industry in the Eureka area with 197.5 million board feet of timber. The Winema, Wenatchee, Fremont, Deschutes, and Okanogan National Forests, located in eastern Oregon and eastern Washington, also supplied small volumes of timber.

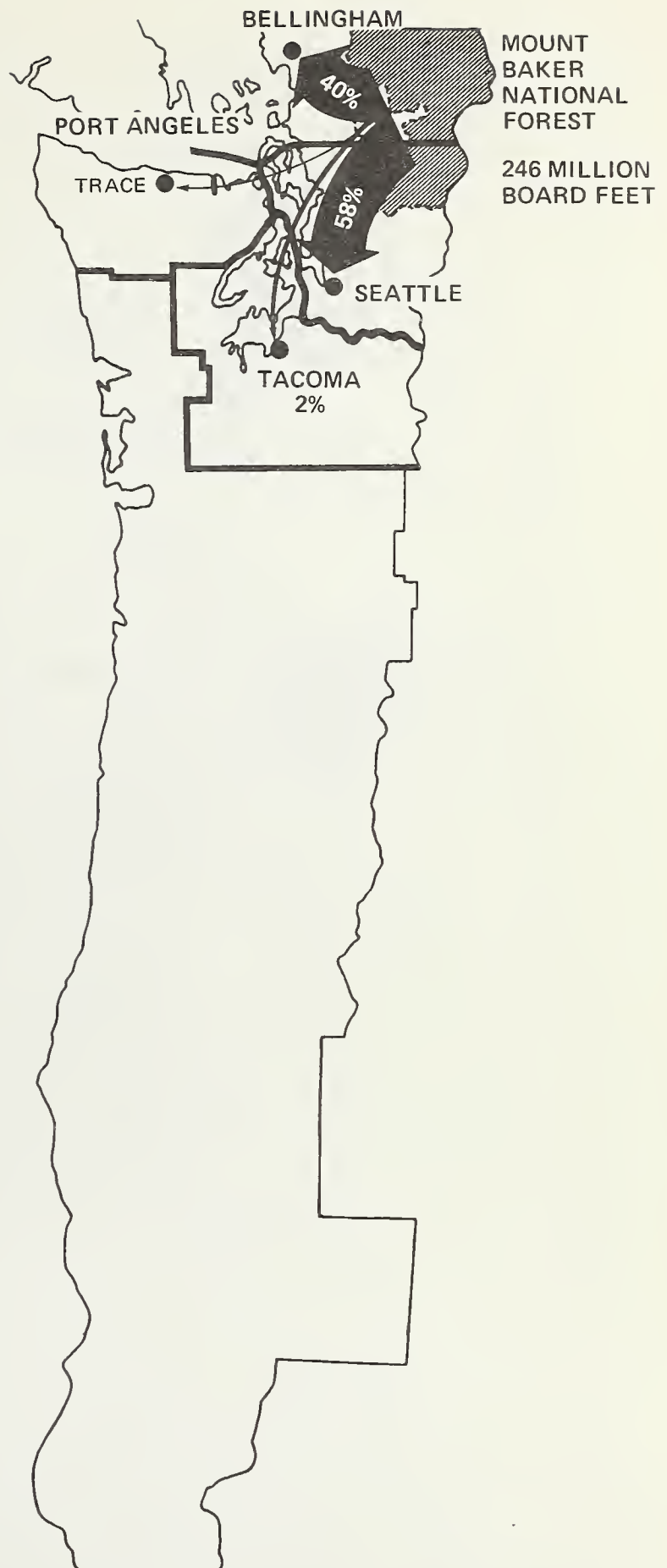
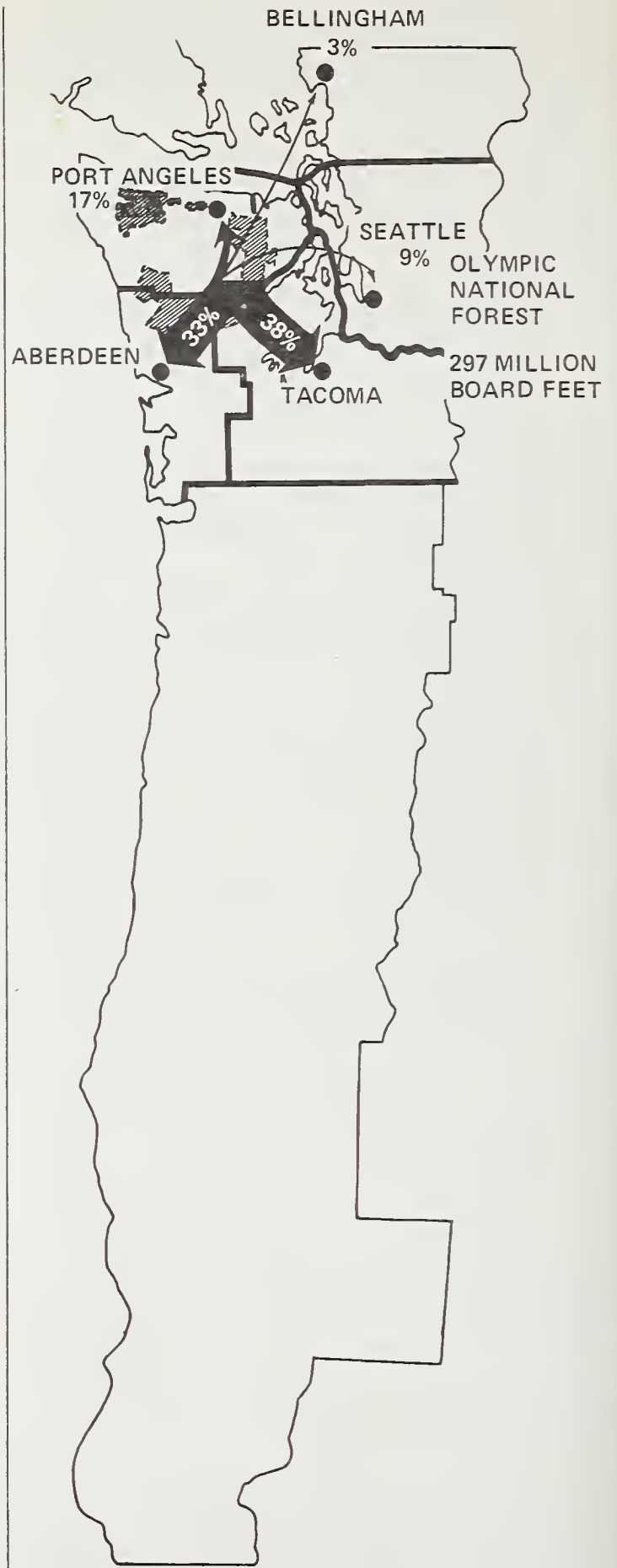
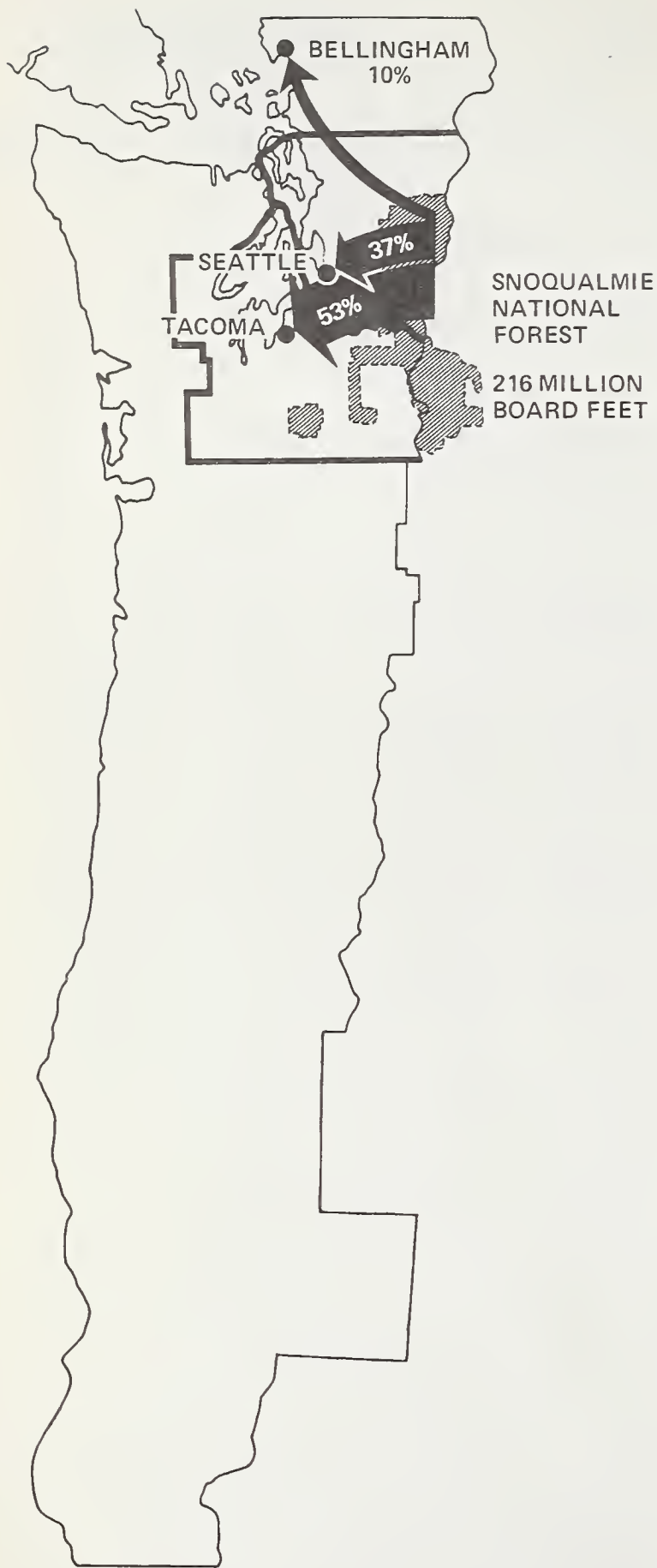
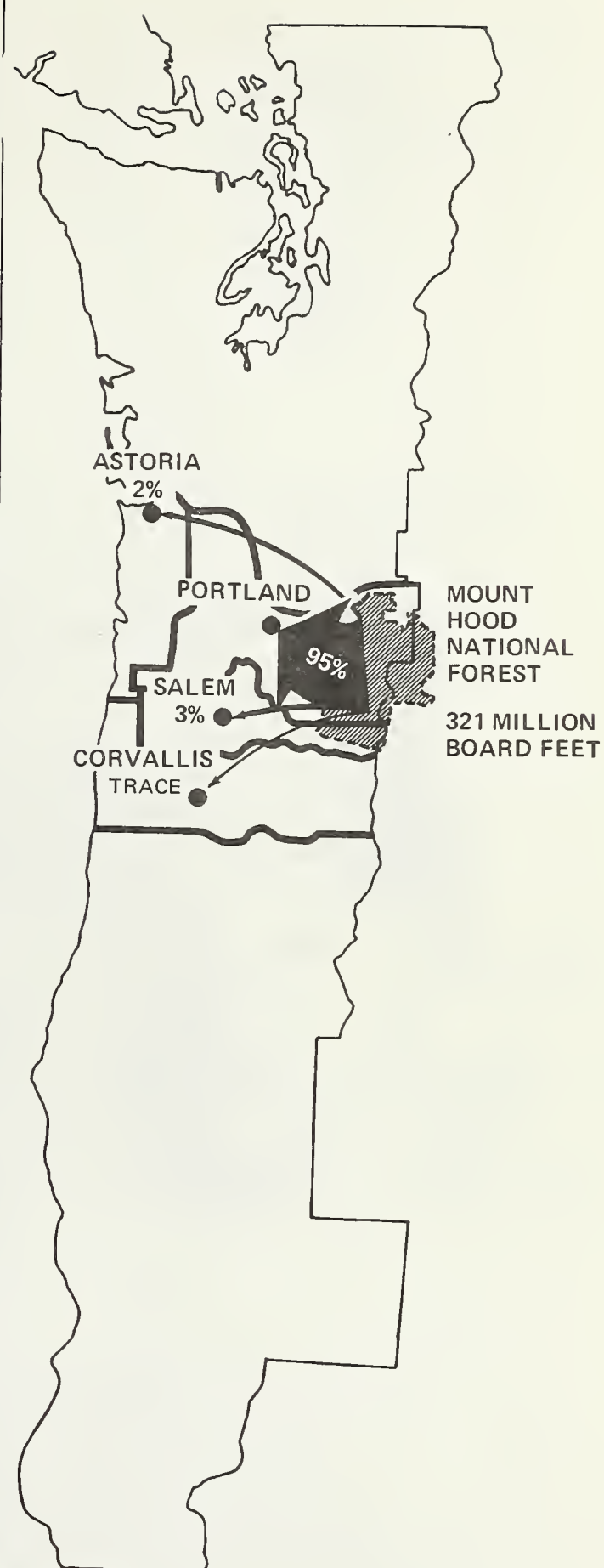
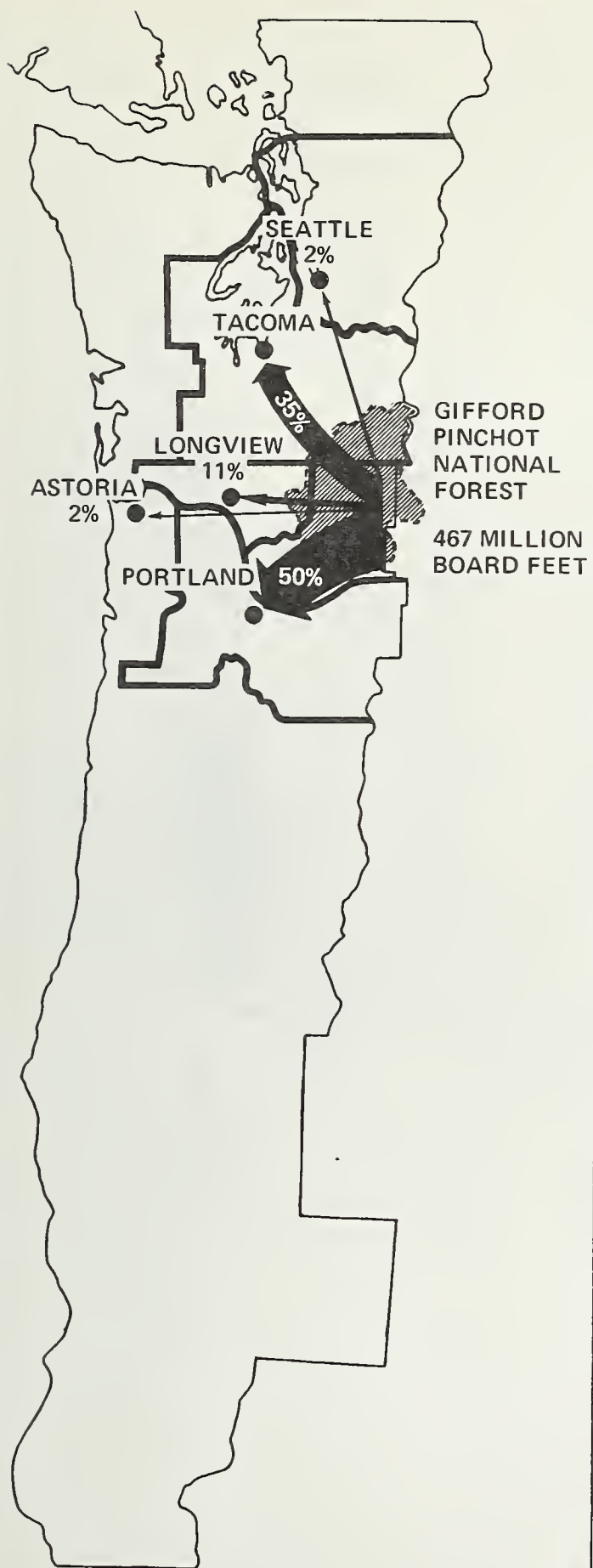
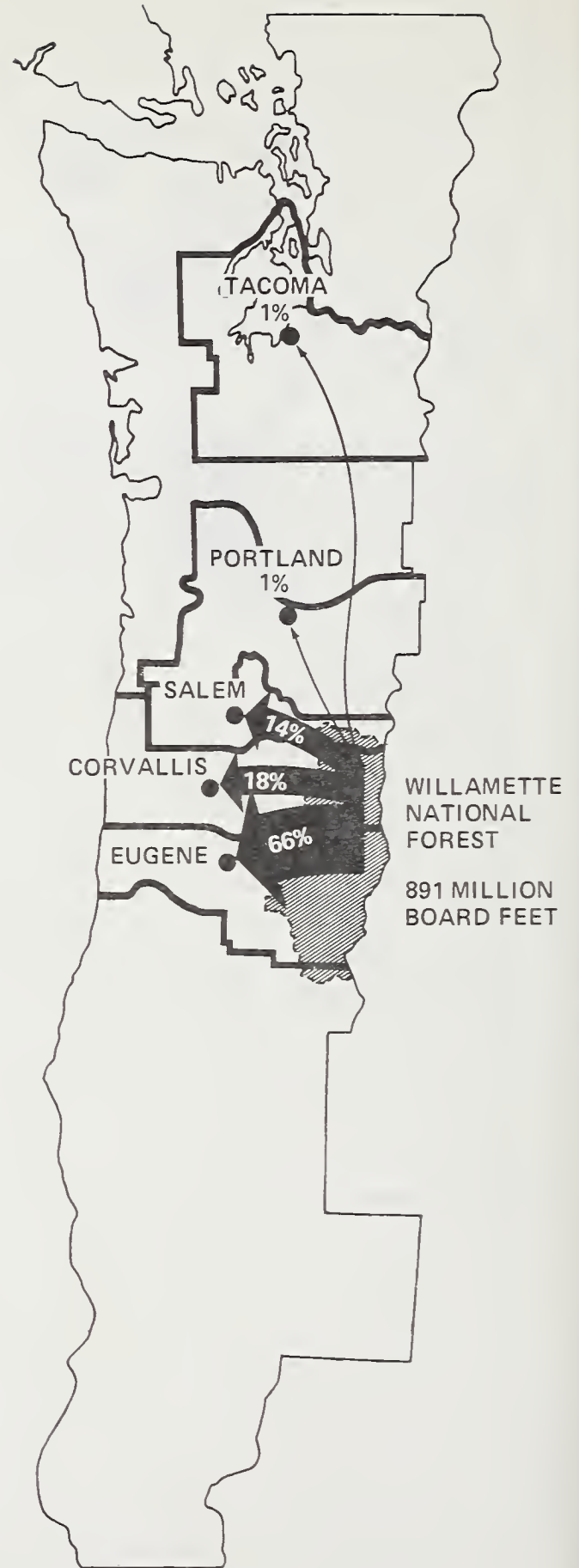
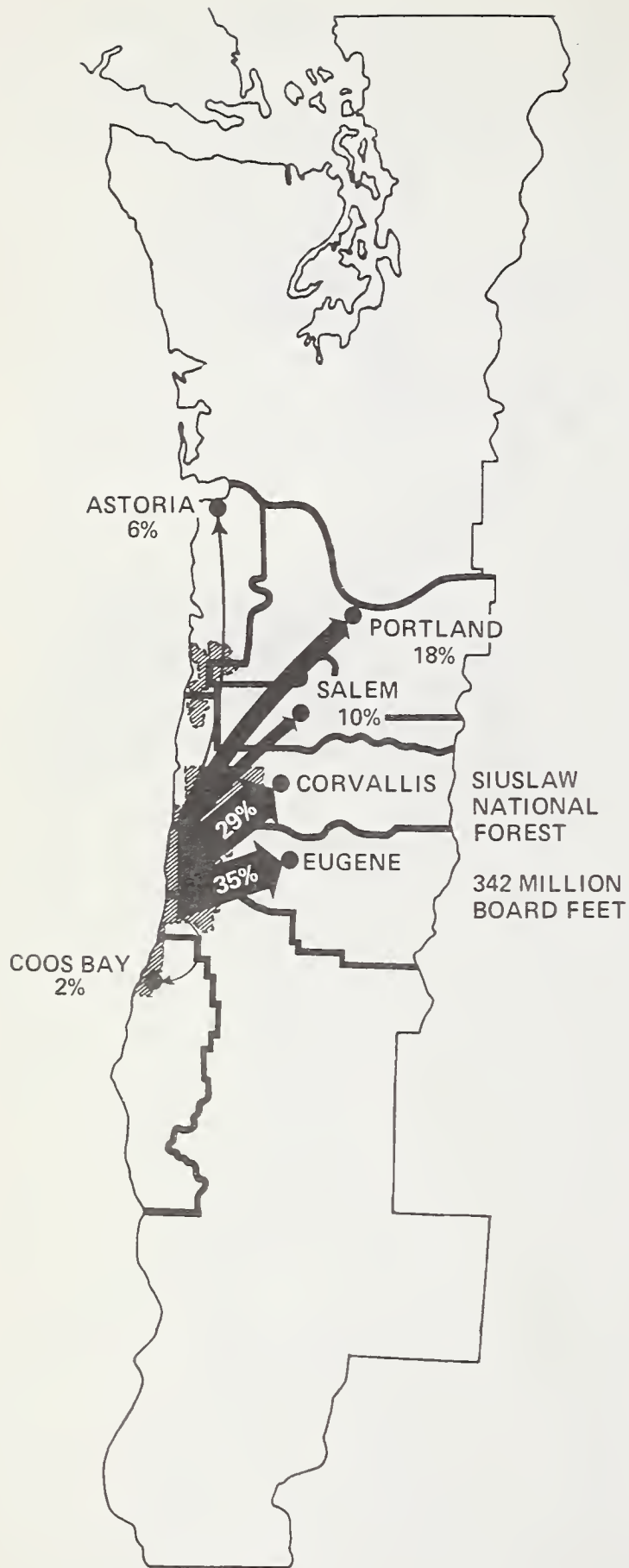


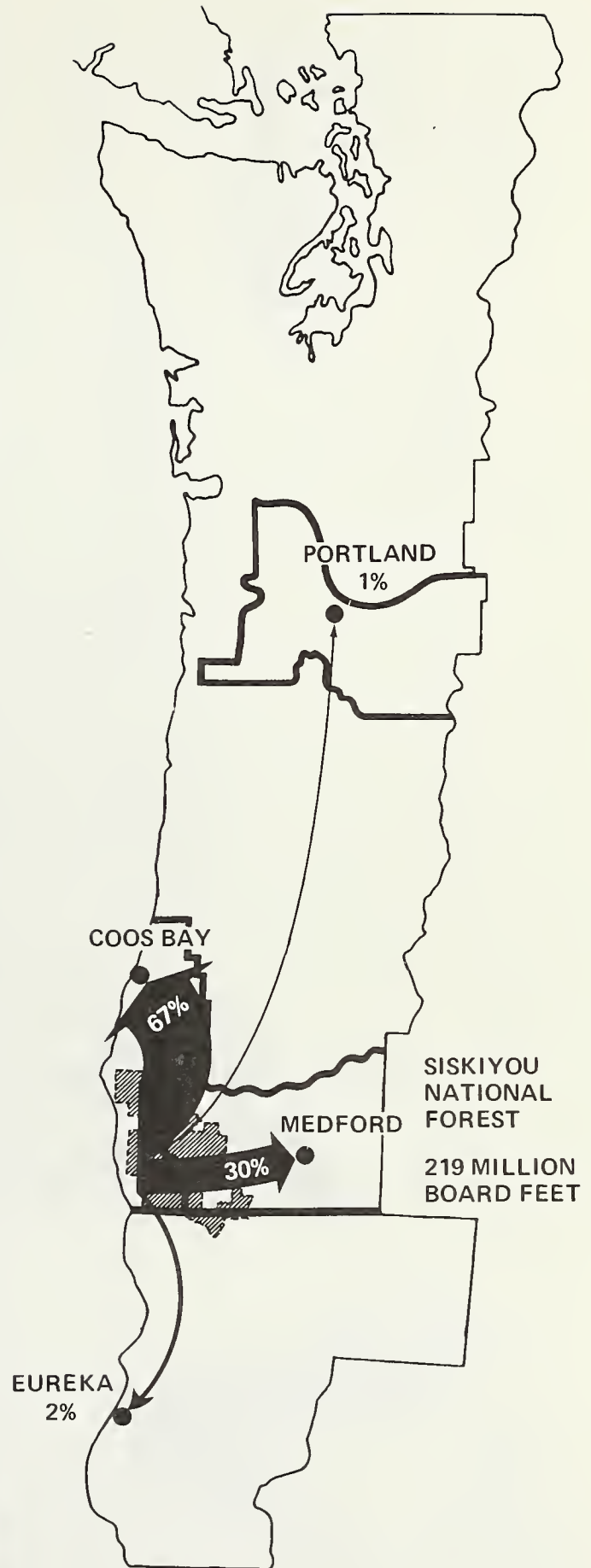
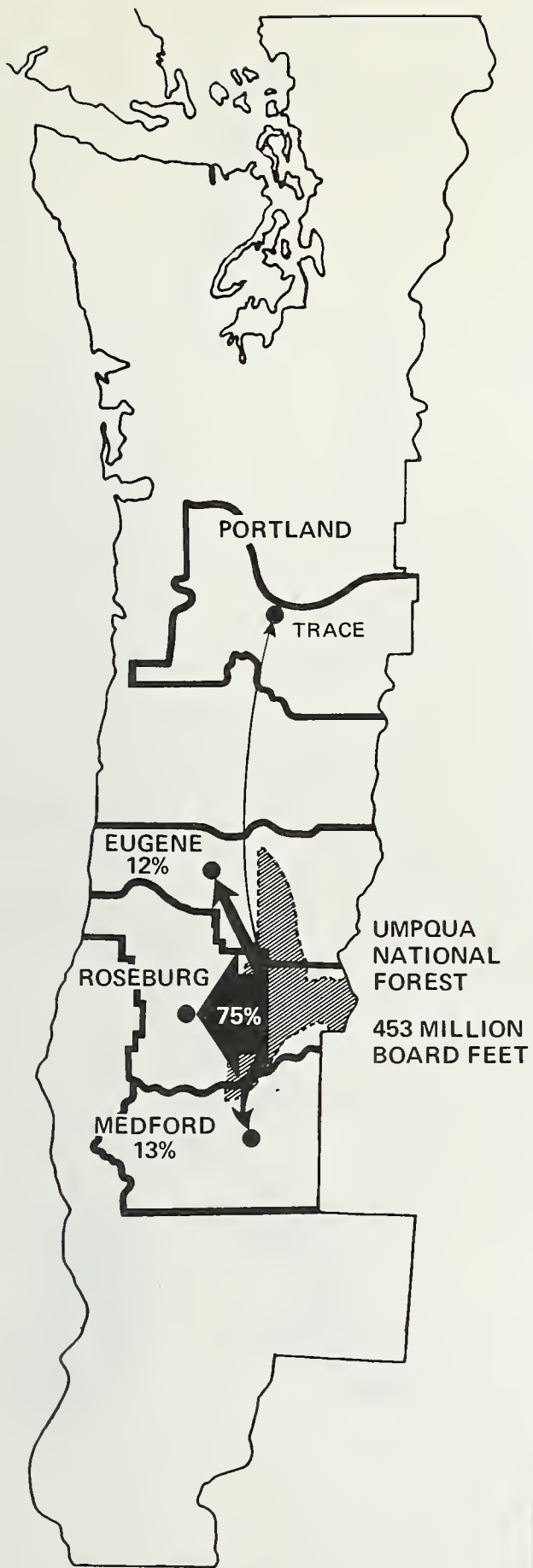
Figure 36. — Log flows to economic areas by National Forest origin, Douglas-fir region, 1966.



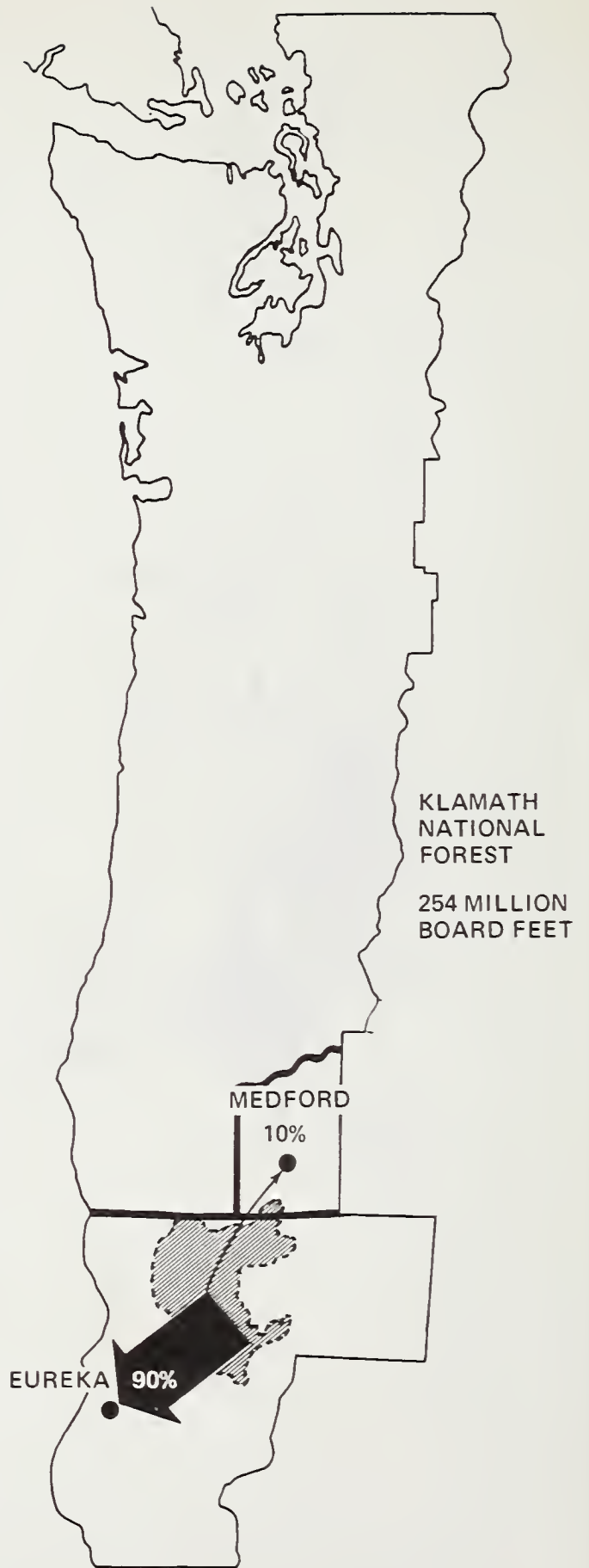
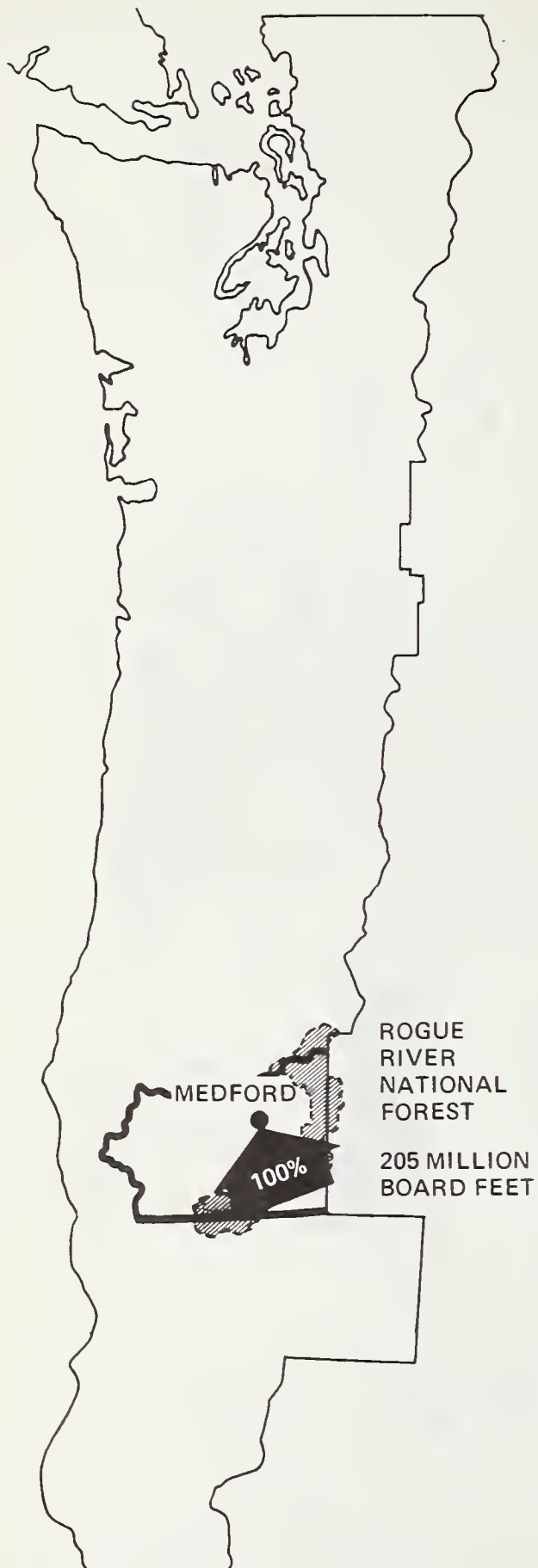


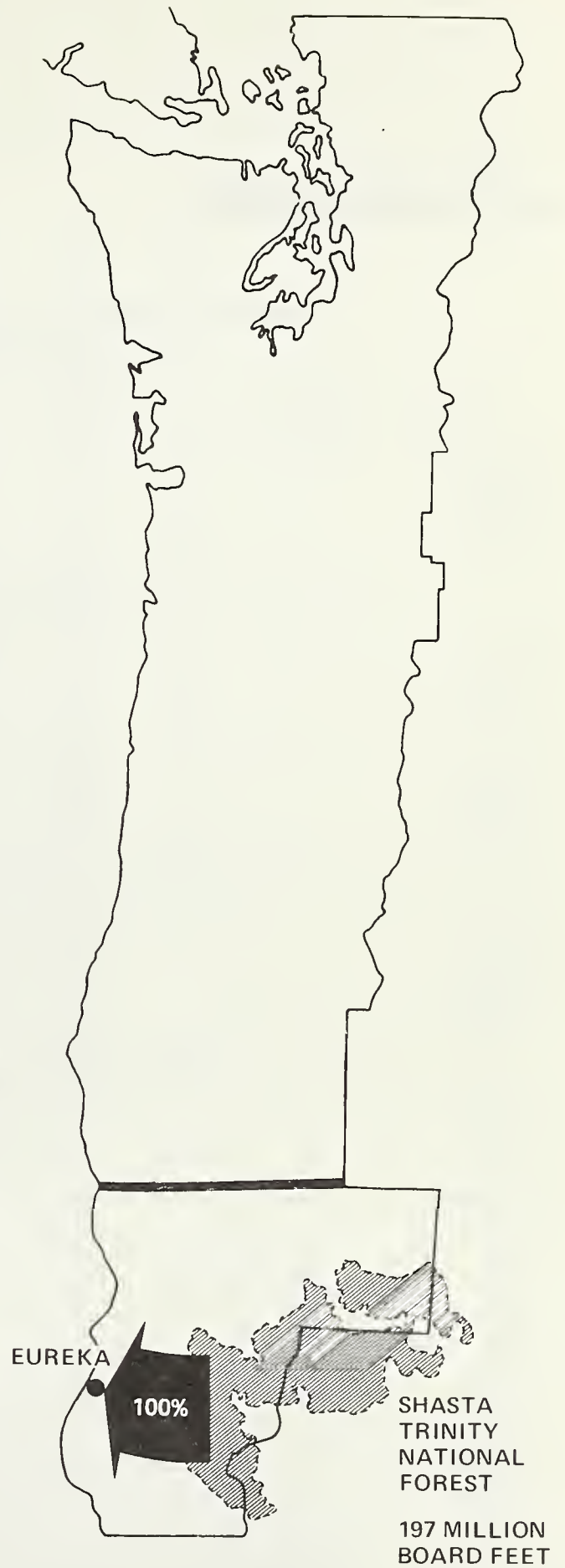
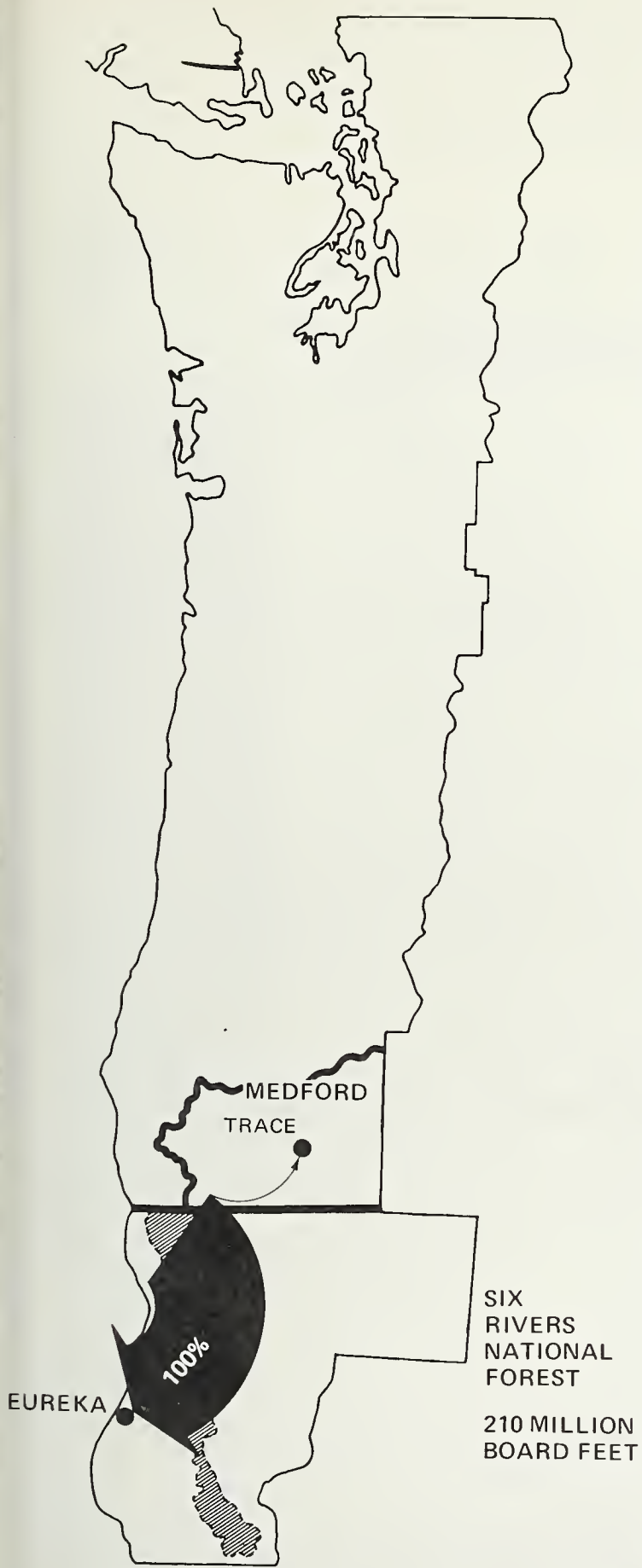












# APPENDIX

Table 13. — Number of active wood product plants by type of plant and county, Douglas-fir region, 1966

State and county	Shake and shingle	Sawmills <sup>1</sup>					Veneer	Veneer and plywood <sup>2</sup>	Plywood	Pulp	Total
		D	C	B	A	Total					
California:											
Del Norte	--	--	3	2	2	7	3	2	--	--	12
Humboldt	1	1	8	15	11	35	3	7	--	2	48
Siskiyou	--	--	3	7	3	13	1	1	--	--	15
Trinity	--	--	3	2	1	6	1	--	--	--	7
Total	1	1	17	26	17	61	8	10	--	2	82
Oregon:											
Benton	--	2	4	2	2	10	2	--	3	1	16
Clackamas	--	7	6	1	4	18	1	1	--	2	22
Clatsop	1	3	--	2	--	5	--	1	--	--	7
Columbia	--	--	2	1	4	7	--	1	--	2	10
Coos	--	1	3	3	3	10	3	8	--	2	23
Curry	--	2	--	2	2	6	1	4	--	--	11
Douglas	--	5	7	10	3	25	9	7	2	1	44
Hood River	--	--	1	2	1	4	--	--	--	1	5
Jackson	--	1	1	7	2	11	2	4	4	--	21
Josephine	--	2	1	2	3	8	--	2	4	--	14
Lane	1	5	15	11	10	41	13	18	5	1	79
Lincoln	--	2	3	2	1	8	1	1	--	1	11
Linn	--	4	2	1	3	10	3	7	3	2	25
Marion	--	1	2	5	--	8	1	2	1	1	13
Multnomah	--	1	3	1	1	6	2	3	1	1	13
Polk	--	2	2	2	1	7	1	3	--	--	11
Tillamook	--	3	1	1	1	6	--	2	--	--	8
Washington	--	2	2	1	--	5	1	--	--	1	7
Yamhill	--	3	2	3	--	8	1	1	2	1	13
Total	2	46	57	59	41	203	41	65	25	17	353
Washington:											
Clallam	6	7	--	--	1	8	--	1	--	3	18
Clark	2	4	1	1	--	6	--	2	--	2	12
Cowlitz	3	4	2	1	2	9	--	2	--	3	17
Grays Harbor	8	3	2	1	2	8	--	6	1	2	25
Island	--	3	--	--	--	3	--	--	--	--	3
Jefferson	1	4	--	--	--	4	1	--	--	1	7
King	1	12	--	2	3	17	--	3	--	--	21
Kitsap	--	5	--	--	1	6	--	--	--	--	6
Lewis	5	9	7	--	1	17	5	1	--	1	29
Mason	--	--	--	--	1	1	1	--	--	1	3
Pacific	7	--	--	--	2	2	--	--	--	--	9
Pierce	2	5	2	3	1	11	--	4	2	2	21
San Juan	--	4	--	--	--	4	--	--	--	--	4
Skagit	7	4	1	--	--	5	--	1	--	1	14
Skamania	--	1	--	--	1	2	2	1	--	--	5
Snohomish	2	12	4	2	1	19	1	1	1	3	27
Thurston	--	6	1	1	--	8	--	1	3	--	12
Wahkiakum	1	1	--	--	--	1	--	--	--	--	2
Whatcom	1	1	1	--	--	2	--	1	--	1	5
Total	46	85	21	11	16	133	10	24	7	20	240
Total, Douglas-fir region	49	132	95	96	74	397	59	99	32	39	675

<sup>1</sup> Sawmills denoted as follows: class A mills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

<sup>2</sup> Integrated operations producing both veneer and plywood.



**Table 14. — Plant capacities by type of plant and county, Douglas-fir region, 1966**

State and county	Shake and shingle	Sawmills <sup>1</sup>					Veneer, 1/8-inch	Veneer and plywood, 3/8-inch <sup>2</sup>	Plywood, 3/8-inch	Pulp
		D	C	B	A	Total				
-----Thousand bd. ft. per 8-hour shift-----							--Thousand sq. ft. per 8-hour shift--		Tons per 24 hours	
California:										
Del Norte	--	--	220	190	305	715	341	501	--	--
Humboldt	11	10	493	1,380	1,920	3,803	465	1,016	--	1,000
Siskiyou	--	--	195	658	625	1,478	165	280	--	--
Trinity	--	--	219	190	160	569	140	--	--	--
Total	11	10	1,127	2,418	3,010	6,565	1,111	1,797	--	1,000
Oregon:										
Benton	--	59	245	180	295	779	296	--	664	100
Clackamas	--	141	315	115	634	1,205	80	480	--	1,150
Clatsop	9	53	--	210	--	263	--	300	--	--
Columbia	--	--	125	90	730	945	--	165	--	550
Coos	--	14	155	280	960	1,409	670	1,673	--	325
Curry	--	15	--	225	274	514	180	920	--	--
Douglas	--	110	413	921	395	1,839	1,370	1,254	275	500
Hood River	--	--	68	180	120	368	--	--	--	100
Jackson	--	15	50	685	425	1,175	700	1,481	730	--
Josephine	--	50	65	210	450	775	--	410	1,232	--
Lane	15	130	840	1,005	1,940	3,915	1,712	3,381	872	1,150
Lincoln	--	30	152	190	160	532	120	155	--	832
Linn	--	89	115	100	505	809	447	916	1,574	617
Marion	--	1	105	461	--	567	123	262	272	230
Multnomah	--	22	200	80	180	482	71	545	30	30
Polk	--	45	144	200	145	534	32	550	--	--
Tillamook	--	36	50	93	160	339	--	285	--	--
Washington	--	15	150	100	--	265	114	--	--	90
Yamhill	--	54	133	270	--	457	60	160	71	166
Total	24	879	3,325	5,595	7,373	17,172	5,975	12,937	5,720	5,840
Washington:										
Clallam	115	63	--	--	125	188	--	200	--	1,052
Clark	12	80	150	100	--	330	--	640	--	1,350
Cowlitz	28	121	110	100	575	906	--	386	--	3,111
Grays Harbor	67	70	110	90	305	575	--	434	150	885
Island	--	47	--	--	--	47	--	--	--	--
Jefferson	10	48	--	--	--	48	100	--	--	500
King	8	149	--	200	620	969	--	343	--	--
Kitsap	--	54	--	--	188	242	--	--	--	--
Lewis	53	124	415	--	130	669	503	136	--	40
Mason	--	--	--	--	282	282	260	--	--	100
Pacific	230	--	--	--	375	375	--	--	--	--
Pierce	4	53	130	290	150	623	--	513	92	1,330
San Juan	--	20	--	--	--	20	--	--	--	--
Skagit	38	81	65	--	--	146	--	175	--	140
Skamania	--	38	--	--	120	158	268	240	--	--
Snohomish	22	190	255	180	500	1,125	57	167	60	1,435
Thurston	--	73	40	116	--	229	--	100	408	--
Wahkiakum	3	4	--	--	--	4	--	--	--	--
Whatcom	8	16	40	--	--	56	--	100	--	500
Total	598	1,231	1,315	1,076	3,370	6,992	1,188	3,434	710	10,443
Total, Douglas-fir region	633	2,120	5,767	9,089	13,753	30,729	8,274	18,168	6,430	17,283

<sup>1</sup> Sawmills denoted as follows: class A mills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

<sup>2</sup> Integrated operations producing both veneer and plywood.

Table 15. — Number of shake and shingle mills listed and responding, capacities of responding mills, and percent of capacity operating on logs, by county, for western Washington, 1966

County	Total number of mills listed	Number of mills responding	Capacities of responding mills	Percent of capacity operating on logs
----- Thousand bd. ft. per 8-hour shift -----				
Washington:				
Clallam	14	6	115	100.0
Clark	2	2	12	94.6
Cowlitz	7	3	28	96.4
Grays Harbor	66	8	67	98.5
Island	0	0	--	--
Jefferson	5	1	10	95.0
King	4	1	3	100.0
Kitsap	0	0	--	--
Lewis	11	5	53	90.0
Mason	1	0	--	--
Pacific	9	7	230	100.0
Pierce	3	2	4	58.0
San Juan	0	0	--	--
Skagit	28	7	38	100.0
Skamania	0	0	--	--
Snohomish	25	2	22	100.0
Thurston	0	0	--	--
Wahkiakum	2	1	3	90.0
Whatcom	8	1	8	100.0
Total	185	46	593	98.3

Table 16. — Volume of logs used by county and type of plant, Douglas-fir region, 1966

(Thousand board feet, Scribner log rule)

State and county	Shake and shingle	Sawmills <sup>1</sup>			Plywood <sup>2</sup>	Pulp	Total
		D and C	B and A	Total			
California:							
Del Norte	--	71,000	121,000	192,000	104,959	--	296,959
Humboldt	500	104,529	829,570	934,099	207,933	--	1,142,532
Siskiyou	--	61,500	373,501	435,001	<sup>3</sup>	--	<sup>3</sup>
Trinity	--	52,820	104,905	157,725	<sup>3</sup>	--	<sup>3</sup>
Total	500	289,849	1,428,976	1,718,825	400,581	--	2,119,906
Oregon:							
Benton	--	71,410	104,551	175,961	<sup>3</sup>	--	214,461
Clackamas	--	68,778	142,294	211,072	<sup>3</sup>	<sup>3</sup>	325,971
Clatsop	1,878	7,250	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	105,064
Columbia	--	<sup>3</sup>	<sup>3</sup>	223,265	<sup>3</sup>	<sup>3</sup>	257,211
Coos	--	46,661	388,955	435,616	367,154	<sup>3</sup>	<sup>3</sup>
Curry	--	<sup>3</sup>	<sup>3</sup>	105,578	133,826	--	239,404
Douglas	--	93,575	328,852	422,427	487,272	--	909,699
Hood River	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	--	109,491
Jackson	--	<sup>3</sup>	<sup>3</sup>	389,556	266,444	--	656,000
Josephine	--	17,099	119,714	136,813	<sup>3</sup>	--	<sup>3</sup>
Lane	9,000	186,340	714,076	900,416	784,367	--	1,693,785
Lincoln	--	27,865	52,801	80,666	<sup>3</sup>	--	134,054
Linn	--	23,967	151,200	175,176	300,570	--	475,737
Marion	--	17,579	142,023	159,602	74,789	--	234,391
Multnomah	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	86,674	--	185,674
Polk	--	27,137	94,500	121,637	118,143	--	239,780
Tillamook	--	16,209	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	155,837
Washington	--	28,710	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	67,210
Yamhill	--	54,736	62,967	117,703	<sup>3</sup>	<sup>3</sup>	173,926
Total	10,878	799,613	3,273,360	4,072,973	2,971,665	153,723	7,209,239
Washington:							
Clallam	25,264	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	206,710	311,261
Clark	123	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	260,098
Cowlitz	8,243	50,529	398,696	449,225	<sup>3</sup>	142,368	<sup>3</sup>
Grays Harbor	16,224	28,858	141,171	170,029	58,613	<sup>3</sup>	<sup>3</sup>
Island	--	10,000	--	10,000	--	--	10,000
Jefferson	<sup>3</sup>	8,000	--	8,000	<sup>3</sup>	<sup>3</sup>	43,500
King	1,500	19,851	251,000	270,851	67,915	--	340,266
Kitsap	--	<sup>3</sup>	<sup>3</sup>	34,774	--	--	34,774
Lewis	13,215	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	108,200	2,400	280,261
Mason	--	3,000	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	168,000
Pacific	30,094	--	<sup>3</sup>	<sup>3</sup>	--	--	<sup>3</sup>
Pierce	293	38,211	148,000	186,211	105,323	<sup>3</sup>	<sup>3</sup>
San Juan	--	900	--	900	--	--	900
Skagit	11,730	38,420	--	38,420	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>
Skamania	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	48,695	--	<sup>3</sup>
Snohomish	3,800	87,495	325,000	412,495	<sup>3</sup>	323,839	<sup>3</sup>
Thurston	--	11,018	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	43,713
Wahkiakum	<sup>3</sup>	<sup>3</sup>	--	<sup>3</sup>	--	--	<sup>3</sup>
Whatcom	1,920	<sup>3</sup>	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	173,429
Total	116,971	494,871	1,669,258	2,164,129	774,629	1,334,469	4,390,198
Total, Douglas-fir region	128,349	1,584,333	6,371,594	7,955,927	4,146,875	1,488,192	13,719,343

<sup>1</sup> Sawmills divided into class D and C with capacity of less than 80,000 board feet per 8-hour shift and class B and A with capacity of 80,000+ board feet per 8-hour shift.

<sup>2</sup> Plywood plants include veneer plants and integrated veneer and plywood plants producing both veneer and plywood.

<sup>3</sup> Withheld to avoid disclosing data for individual firms.



**Table 17. — Volume of National Forest logs used by county and type of plant,  
Douglas-fir region, 1966**

(Thousand board feet, Scribner log rule)

State and county	Shake and shingle	Sawmills <sup>1</sup>			Plywood <sup>2</sup>	Pulp	Total
		D and C	B and A	Total			
California:							
Del Norte	--	14,000	--	14,000	28,383	--	42,383
Humboldt	--	16,157	153,904	170,061	37,635	--	207,696
Siskiyou	--	44,850	165,485	210,335	<sup>3</sup>	--	<sup>3</sup>
Trinity	--	26,933	83,879	110,812	<sup>3</sup>	--	<sup>3</sup>
Total	--	101,940	403,268	505,208	132,776	--	637,984
Oregon:							
Benton	--	32,399	33,882	66,281	<sup>3</sup>	--	75,931
Clackamas	--	52,478	108,895	161,373	<sup>3</sup>	<sup>3</sup>	212,983
Clatsop	--	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	13,033
Columbia	--	<sup>3</sup>	<sup>3</sup>	19,770	<sup>3</sup>	<sup>3</sup>	19,770
Coos	--	1,509	19,713	21,220	48,032	<sup>3</sup>	<sup>3</sup>
Curry	--	<sup>3</sup>	<sup>3</sup>	33,952	45,050	--	79,002
Douglas	--	38,377	108,288	146,665	194,775	--	341,440
Hood River	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	--	89,468
Jackson	--	<sup>3</sup>	<sup>3</sup>	177,872	110,752	--	228,624
Josephine	--	1,084	76,231	77,315	<sup>3</sup>	--	<sup>3</sup>
Lane	3,600	101,241	257,850	359,091	400,240	--	762,931
Lincoln	--	4,074	12,192	16,266	<sup>3</sup>	--	21,216
Linn	--	19,278	60,588	79,866	79,727	--	159,593
Marion	--	3,000	95,786	98,786	49,035	--	147,821
Multnomah	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	36,787	--	88,607
Polk	--	--	13,850	13,850	7,168	--	21,018
Tillamook	--	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	19,439
Washington	--	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	--
Yamhill	--	16,608	30,323	46,931	<sup>3</sup>	<sup>3</sup>	61,235
Total	3,600	292,229	1,175,286	1,467,515	1,085,265	11,305	2,567,685
Washington:							
Clallam	1,363	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	17,239	46,592
Clark	13	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	53,287
Cowlitz	41	18,960	24,560	43,520	<sup>3</sup>	2,731	<sup>3</sup>
Grays Harbor	3,374	500	57,650	58,150	24,970	<sup>3</sup>	<sup>3</sup>
Island	--	--	--	--	--	--	--
Jefferson	<sup>3</sup>	--	--	--	<sup>3</sup>	<sup>3</sup>	4,200
King	750	5,428	45,790	51,218	17,816	--	69,784
Kitsap	--	<sup>3</sup>	<sup>3</sup>	9,984	--	--	9,984
Lewis	283	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	65,300	--	151,734
Mason	--	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	101,500
Pacific	--	--	<sup>3</sup>	<sup>3</sup>	--	--	<sup>3</sup>
Pierce	75	13,500	24,360	37,860	53,749	<sup>3</sup>	<sup>3</sup>
San Juan	--	--	--	--	--	--	--
Skagit	3,863	15,850	--	15,850	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>
Skamania	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	45,958	--	<sup>3</sup>
Snohomish	2,625	37,804	67,900	105,704	<sup>3</sup>	70,276	<sup>3</sup>
Thurston	--	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	17,804
Wahkiakum	<sup>3</sup>	<sup>3</sup>	--	<sup>3</sup>	--	--	<sup>3</sup>
Whatcom	672	<sup>3</sup>	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	77,942
Total	13,059	164,848	380,810	545,658	383,675	212,138	1,154,530
Total, Douglas- fir region	16,659	559,017	1,959,364	2,518,381	1,601,716	223,443	4,360,199

<sup>1</sup> Sawmills divided into class D and C with capacity of less than 80,000 board feet per 8-hour shift and class B and A with capacity of 80,000+ board feet per 8-hour shift.

<sup>2</sup> Plywood plants include veneer plants and integrated veneer and plywood plants producing both veneer and plywood.

<sup>3</sup> Withheld to avoid disclosing data for individual firms.

**Table 18. — Volume of Bureau of Land Management logs used by county and plant type, Douglas-fir region, 1966**

(Thousand board feet, Scribner log rule)

State and county	Shake and shingle	Sawmills <sup>1</sup>			Plywood <sup>2</sup>	Pulp	Total
		D and C	B and A	Total			
California:							
Del Norte	--	--	--	--	--	--	--
Humboldt	--	5,300	12,940	18,240	--	--	18,240
Siskiyou	--	--	--	--	--	--	3
Trinity	--	2,880	--	2,880	--	--	3
Total	--	8,180	12,940	21,120	--	--	21,120
Oregon:							
Benton	--	15,210	39,235	54,445	3	--	71,695
Clackamas	--	--	508	5,800	3	3	11,317
Clatsop	--	--	3	3	3	--	--
Columbia	--	3	3	--	3	3	--
Coos	--	9,433	39,130	48,563	70,177	3	3
Curry	--	3	3	855	756	--	1,611
Douglas	--	15,696	99,781	115,477	125,811	--	241,348
Hood River	--	3	3	3	--	--	--
Jackson	--	3	3	83,352	57,090	--	140,442
Josephine	--	11,647	37,283	48,930	3	--	3
Lane	1,800	44,586	70,512	115,098	97,933	--	214,831
Lincoln	--	4,791	--	4,791	3	--	4,791
Linn	--	146	20,360	20,506	46,187	--	66,693
Marion	--	3,000	17,750	20,750	3,899	--	24,649
Multnomah	--	3	3	3	440	--	2,250
Polk	--	--	23,160	23,160	25,062	--	48,222
Tillamook	--	--	3	3	3	--	21,752
Washington	--	--	3	3	3	--	14,025
Yamhill	--	7,427	10,074	17,501	3	3	34,966
Total	1,800	127,406	450,400	577,806	492,684	12,119	1,084,409
Washington:							
Clallam	--	3	3	3	3	--	--
Clark	--	3	3	3	3	3	--
Cowlitz	--	480	--	480	3	--	3
Grays Harbor	--	--	--	--	--	3	3
Island	--	--	--	--	--	--	--
Jefferson	3	--	--	--	3	3	--
King	--	--	--	--	--	--	--
Kitsap	--	3	3	--	--	--	--
Lewis	--	3	3	3	--	--	--
Mason	--	--	3	3	3	--	--
Pacific	--	--	3	3	--	--	3
Pierce	--	--	--	--	--	3	3
San Juan	--	--	--	--	--	--	--
Skagit	--	--	--	--	3	3	3
Skamania	--	3	3	3	--	--	3
Snohomish	--	--	--	--	3	--	3
Thurston	--	--	3	3	3	--	--
Wahkiakum	3	3	--	3	--	--	3
Whatcom	--	3	--	3	3	3	--
Total	--	480	--	480	3,000	--	3,480
Total, Douglas-fir region	1,800	136,066	463,340	599,406	495,684	12,119	1,109,009

<sup>1</sup>Sawmills divided into class D and C with capacity of less than 80,000 board feet per 8-hour shift and class B and A with capacity of 80,000+ board feet per 8-hour shift.

<sup>2</sup>Plywood plants include veneer plants and integrated veneer and plywood plants producing both veneer and plywood.

<sup>3</sup>Withheld to avoid disclosing data for individual firms.

Table 19. — Volume of Bureau of Indian Affairs logs used by county and plant type, Douglas-fir region, 1966

(Thousand board feet, Scribner log rule)

State and county	Shake and shingle	Sawmills <sup>1</sup>			Plywood <sup>2</sup>	Pulp	Total
		D and C	B and A	Total			
California:							
Del Norte	--	--	--	--	--	--	--
Humboldt	--	--	12,500	12,500	23,154	--	35,654
Siskiyou	--	--	--	--	3	--	3
Trinity	--	--	4,500	4,500	3	--	3
Total	--	--	17,000	17,000	25,074	--	42,074
Oregon:							
Benton	--	--	--	--	3	--	--
Clackamas	--	--	--	--	3	3	--
Clatsop	--	--	3	3	3	--	--
Columbia	--	3	3	--	3	3	--
Coos	--	--	--	--	--	3	3
Curry	--	3	3	--	--	--	--
Douglas	--	--	--	--	--	--	--
Hood River	--	3	3	3	--	--	--
Jackson	--	3	3	--	--	--	--
Josephine	--	--	--	--	3	--	3
Lane	--	--	--	--	--	--	--
Lincoln	--	--	--	--	3	--	--
Linn	--	--	--	--	--	--	--
Marion	--	--	--	--	--	--	--
Multnomah	--	3	3	3	--	--	2,600
Polk	--	--	--	--	--	--	--
Tillamook	--	3	3	--	3	--	--
Washington	--	--	3	3	3	--	--
Yamhill	--	--	--	--	3	3	--
Total	--	2,600	--	2,600	--	--	2,600
Washington:							
Clallam	--	3	3	3	3	5,220	5,796
Clark	--	3	3	3	3	3	--
Cowlitz	--	--	--	--	3	--	3
Grays Harbor	11,428	1,443	--	1,433	--	3	3
Island	--	--	--	--	--	--	--
Jefferson	3	--	--	--	3	3	--
King	--	--	2,900	2,900	--	--	2,900
Kitsap	--	3	3	--	--	--	--
Lewis	4,125	3	3	3	--	--	4,745
Mason	--	--	3	3	3	--	--
Pacific	--	--	--	3	3	--	3
Pierce	--	3,600	--	3,600	--	3	3
San Juan	--	--	--	--	--	--	--
Skagit	--	1,300	--	1,300	3	3	3
Skamania	--	3	3	3	3	--	3
Snohomish	--	11	--	11	3	--	3
Thurston	--	--	3	3	3	--	3
Wahkiakum	3	3	--	3	--	--	--
Whatcom	--	3	--	3	3	3	130
Total	15,553	7,680	2,900	10,580	5,813	34,400	66,346
Total, Douglas-fir region	15,553	10,280	19,900	30,180	30,887	34,400	111,020

<sup>1</sup>Sawmills divided into class D and C with capacity of less than 80,000 board feet per 8-hour shift and class B and A with capacity of 80,000+ board feet per 8-hour shift.

<sup>2</sup>Plywood plants include veneer plants and integrated veneer and plywood plants producing both veneer and plywood.

<sup>3</sup>Withheld to avoid disclosing data for individual firms.



Table 20. — Volume of State logs used by county and plant type, Douglas-fir region, 1966

(Thousand board feet, Scribner log rule)

State and county	Shake and shingle	Sawmills <sup>1</sup>			Plywood <sup>2</sup>	Pulp	Total
		D and C	B and A	Total			
California:							
Del Norte	--	--	--	--	--	--	--
Humboldt	--	--	--	--	--	--	--
Siskiyou	--	--	--	--	--	--	--
Trinity	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--
Oregon:							
Benton	--	1,925	--	1,925	3	3	3,875
Clackamas	--	--	--	--	3	3	6,715
Clatsop	--	2,000	3	3	3	--	15,111
Columbia	--	3	3	16,390	3	3	16,390
Coos	--	27,167	38,402	65,569	9,540	3	3
Curry	--	3	3	900	--	--	900
Douglas	--	614	1,075	1,689	1,073	--	2,762
Hood River	--	3	3	3	--	--	4,350
Jackson	--	3	3	513	372	--	885
Josephine	--	--	1,800	1,800	3	--	3
Lane	--	489	4,944	5,433	275	--	5,708
Lincoln	--	252	4,510	4,762	3	3	4,762
Linn	--	--	--	--	4,097	--	4,097
Marion	--	1,000	990	1,990	1,800	--	3,790
Multnomah	--	3	3	3	10,245	--	11,165
Polk	--	3,150	4,000	7,150	1,768	--	8,918
Tillamook	--	--	3	3	3	--	19,887
Washington	--	2,480	3	3	3	--	11,915
Yamhill	--	1,457	1,500	2,957	3	3	4,696
Total	--	42,034	101,893	143,927	50,454	12,194	206,575
Washington:							
Clallam	2,331	3	3	3	3	24,296	54,015
Clark	--	3	3	3	3	3	14,911
Cowlitz	21	4,012	30,462	34,474	3	8,192	3
Grays Harbor	480	3,000	10,850	13,850	5,910	3	3
Island	--	--	--	--	--	--	--
Jefferson	3	200	--	200	3	3	12,300
King	--	4,530	11,200	15,730	--	--	15,730
Kitsap	--	3	3	3,590	--	--	3,590
Lewis	3,995	3	3	3	31,720	--	44,085
Mason	--	--	3	3	3	--	--
Pacific	260	--	3	3	--	--	3
Pierce	--	4,350	12,570	16,920	15,466	3	3
San Juan	--	--	--	--	--	--	--
Skagit	1,200	6,500	--	6,500	3	3	3
Skamania	--	3	3	3	--	--	3
Snohomish	875	7,707	8,000	15,707	3	25,702	3
Thurston	--	660	3	3	3	--	6,980
Wahkiakum	3	3	--	3	--	--	3
Whatcom	288	3	--	3	3	3	15,737
Total	9,450	45,936	105,344	151,280	98,490	104,010	363,230
Total, Douglas-fir region	9,450	87,970	207,237	295,207	148,944	116,204	569,805

<sup>1</sup> Sawmills divided into class D and C with capacity of less than 80,000 board feet per 8-hour shift and class B and A with capacity of 80,000+ board feet per 8-hour shift.

<sup>2</sup> Plywood plants include veneer plants and integrated veneer and plywood plants producing both veneer and plywood.

<sup>3</sup> Withheld to avoid disclosing data for individual firms.

**Table 21. — Volume of logs used from company owned land supplying own mills  
by county and plant type, Douglas-fir region, 1966**

(Thousand board feet, Scribner log rule)

State and county	Shake and shingle	Sawmills <sup>1</sup>			Plywood <sup>2</sup>	Pulp	Total
		D and C	B and A	Total			
California:							
Del Norte	--	50,500	47,000	97,500	35,577	--	133,077
Humboldt	--	41,532	318,427	359,959	107,769	--	467,728
Siskiyou	--	2,425	141,952	144,377	<sup>3</sup>	--	<sup>3</sup>
Trinity	--	1,046	6,600	7,646	<sup>3</sup>	--	<sup>3</sup>
Total	--	95,503	513,979	609,482	154,703	--	764,185
Oregon:							
Benton	--	3,897	5,822	9,719	<sup>3</sup>	--	18,604
Clackamas	--	1,103	12,470	13,573	<sup>3</sup>	<sup>3</sup>	46,889
Clatsop	--	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	--
Columbia	--	<sup>3</sup>	<sup>3</sup>	60,066	<sup>3</sup>	<sup>3</sup>	88,012
Coos	--	3,600	214,350	217,950	210,296	<sup>3</sup>	<sup>3</sup>
Curry	--	<sup>3</sup>	<sup>3</sup>	33,625	73,786	--	107,411
Douglas	--	4,325	48,729	53,054	120,618	--	173,672
Hood River	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	--	13,089
Jackson	--	<sup>3</sup>	<sup>3</sup>	56,107	68,960	--	125,067
Josephine	--	--	400	400	<sup>3</sup>	--	<sup>3</sup>
Lane	--	5,000	295,967	300,967	227,751	--	528,718
Lincoln	--	4,821	7,632	12,453	<sup>3</sup>	--	60,341
Linn	--	--	48,252	48,258	121,160	--	169,412
Marion	--	861	990	1,851	1,065	--	2,916
Multnomah	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	3,740	--	9,180
Polk	--	1,527	23,930	25,457	43,960	--	69,417
Tillamook	--	400	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	6,223
Washington	--	3,533	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	13,872
Yamhill	--	9,841	5,476	15,317	<sup>3</sup>	<sup>3</sup>	29,293
Total	--	43,296	827,956	871,252	977,885	41,889	1,891,026
Washington:							
Clallam	150	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	125,929	129,586
Clark	6	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	110,381
Cowlitz	--	1,749	305,702	307,451	<sup>3</sup>	85,583	<sup>3</sup>
Grays Harbor	--	500	59,171	59,671	1,130	<sup>3</sup>	<sup>3</sup>
Island	--	4,900	--	4,900	--	--	4,900
Jefferson	<sup>3</sup>	--	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	4,900
King	--	22	164,800	164,822	39,882	--	2,100
Kitsap	--	<sup>3</sup>	<sup>3</sup>	8,245	--	--	204,644
Lewis	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	3,250	--	8,245
Mason	--	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	11,543
Pacific	10,973	--	<sup>3</sup>	<sup>3</sup>	--	--	<sup>3</sup>
Pierce	--	2,800	59,500	62,300	23,261	<sup>3</sup>	<sup>3</sup>
San Juan	--	110	--	110	--	--	147,279
Skagit	--	--	--	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>
Skamania	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	--	<sup>3</sup>
Snohomish	--	2,440	244,200	246,640	<sup>3</sup>	175,580	<sup>3</sup>
Thurston	--	170	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	3,832
Wahkiakum	<sup>3</sup>	<sup>3</sup>	--	<sup>3</sup>	--	--	<sup>3</sup>
Whatcom	--	<sup>3</sup>	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	24,065
Total	11,129	21,179	972,818	993,997	171,192	715,287	1,891,605
Total, Douglas- fir region	11,129	159,978	2,314,753	2,474,731	1,303,780	757,176	4,546,816

<sup>1</sup> Sawmills divided into class D and C with capacity of less than 80,000 board feet per 8-hour shift and class B and A with capacity of 80,000+ board feet per 8-hour shift.

<sup>2</sup> Plywood plants include veneer plants and integrated veneer and plywood plants producing both veneer and plywood.

<sup>3</sup> Withheld to avoid disclosing data for individual firms.

**Table 22. — Volume of purchased private logs used by county and plant type,  
Douglas-fir region, 1966**

**(Thousand board feet, Scribner log rule)**

State and county	Shake and shingle	Sawmills <sup>1</sup>			Plywood <sup>2</sup>	Pulp	Total
		D and C	B and A	Total			
California:							
Del Norte	--	6,500	74,000	80,500	40,999	--	121,499
Humboldt	500	41,540	331,799	373,339	39,375	--	413,214
Siskiyou	--	14,225	66,064	80,289	<sup>3</sup>	--	<sup>3</sup>
Trinity	--	21,961	9,926	31,887	<sup>3</sup>	--	<sup>3</sup>
Total	500	84,226	481,789	566,015	88,028	--	654,543
Oregon:							
Benton	--	17,979	25,612	43,591	<sup>3</sup>	--	44,356
Clackamas	--	15,197	15,129	30,326	<sup>3</sup>	<sup>3</sup>	48,067
Clatsop	1,878	5,250	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	77,720
Columbia	--	<sup>3</sup>	<sup>3</sup>	127,039	<sup>3</sup>	<sup>3</sup>	133,039
Coos	--	4,952	77,360	82,312	29,109	<sup>3</sup>	<sup>3</sup>
Curry	--	<sup>3</sup>	<sup>3</sup>	36,246	14,234	--	50,480
Douglas	--	34,563	70,979	105,542	44,935	--	150,477
Hood River	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	--	2,584
Jackson	--	<sup>3</sup>	<sup>3</sup>	71,712	29,270	--	100,982
Josephine	--	4,368	4,000	8,368	<sup>3</sup>	--	<sup>3</sup>
Lane	3,600	35,024	84,805	119,829	58,168	--	181,597
Lincoln	--	13,927	28,467	42,394	<sup>3</sup>	--	42,944
Linn	--	4,543	22,000	26,543	49,399	--	75,942
Marion	--	9,718	26,507	36,225	18,990	--	55,215
Multnomah	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	35,462	--	71,872
Polk	--	22,460	29,560	52,020	40,185	--	92,205
Tillamook	--	15,809	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	88,536
Washington	--	22,698	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	27,398
Yamhill	--	19,403	15,594	34,997	<sup>3</sup>	<sup>3</sup>	43,736
Total	5,478	292,048	717,825	1,009,873	365,377	76,216	1,456,944
Washington:							
Clallam	21,420	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	34,026	75,274
Clark	104	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	81,519
Cowlitz	8,181	25,328	37,972	6,300	<sup>3</sup>	45,862	<sup>3</sup>
Grays Harbor	942	23,415	13,500	39,915	22,040	<sup>3</sup>	<sup>3</sup>
Island	--	5,100	--	5,100	--	--	5,100
Jefferson	<sup>3</sup>	7,800	--	7,800	--	<sup>3</sup>	24,900
King	750	9,871	26,310	36,181	10,277	--	47,208
Kitsap	--	<sup>3</sup>	<sup>3</sup>	12,955	--	--	12,955
Lewis	4,812	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	7,930	--	68,154
Mason	--	3,000	<sup>3</sup>	<sup>3</sup>	2,500	--	11,250
Pacific	18,861	--	<sup>3</sup>	<sup>3</sup>	--	--	<sup>3</sup>
Pierce	218	13,961	51,570	65,531	9,847	<sup>3</sup>	<sup>3</sup>
San Juan	--	790	--	790	--	--	790
Skagit	6,667	14,770	--	14,770	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>
Skamania	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	--	<sup>3</sup>
Snohomish	300	39,533	4,900	44,433	<sup>3</sup>	52,281	<sup>3</sup>
Thurston	--	10,188	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	--	15,097
Wahkiakum	<sup>3</sup>	<sup>3</sup>	--	<sup>3</sup>	--	--	<sup>3</sup>
Whatcom	960	<sup>3</sup>	--	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	55,555
Total	67,780	254,748	207,386	462,134	112,459	268,634	911,007
Total, Douglas-fir region	73,758	631,022	1,407,000	2,038,022	565,864	344,850	3,022,494

<sup>1</sup>Sawmills divided into class D and C with capacity of less than 80,000 board feet per 8-hour shift and class B and A with capacity of 80,000+ board feet per 8-hour shift.

<sup>2</sup>Plywood plants include veneer plants and integrated veneer and plywood plants producing both veneer and plywood.

<sup>3</sup>Withheld to avoid disclosing data for individual firms.



Table 23. — Volume of logs used in western  
(Thousand board feet,

Washington counties, by county of origin, 1966  
Cribner log rule)

Log origin by State and county	Log								
	Clallam	Clark	Cowlitz <sup>1</sup>	Grays Harbor	Island	Jefferson	King	Kitsap	Lewis
Oregon:									
Clackamas	--	6,875	30,821	--	--	--	--	--	--
Clatsop	--	64,650	1,054	--	--	--	--	--	--
Columbia	--	4,975	4,159	--	--	--	--	--	--
Lincoln	--	296	--	--	--	--	--	--	--
Linn	--	--	--	--	--	--	--	--	--
Polk	--	247	--	--	--	--	--	--	--
Other, eastern <sup>2</sup>	--	6,875	--	--	--	--	--	--	--
Total <sup>3</sup>	--	83,918	36,034	--	--	--	--	--	--
Washington:									
Clallam	242,529	--	--	250	--	750	9,000	3,941	--
Clark	--	8,526	13,159	--	--	--	--	--	--
Cowlitz	--	13,218	351,745	520	--	--	5,000	--	20,040
Grays Harbor	432	--	--	331,193	--	--	5,000	--	7,749
Island	--	--	--	--	10,000	3,000	--	--	--
Jefferson	67,507	--	--	32,106	--	31,350	25,408	10,846	--
King	--	--	--	--	--	2,100	220,665	--	246
Kitsap	--	--	--	--	--	--	--	11,843	--
Lewis	--	12,600	158,897	2,400	--	--	27,757	--	202,675
Mason	--	--	--	1,426	--	2,100	2,700	2,802	2,973
Pacific	--	22,691	70,820	77,761	--	--	--	--	1,359
Pierce	--	--	--	--	--	2,100	4,973	350	3,236
San Juan	--	--	--	--	--	--	--	--	--
Skagit	795	--	--	--	--	--	3,150	--	--
Skamania	--	97,111	37,881	--	--	--	--	--	35,768
Snohomish	--	--	--	--	--	--	2,696	--	--
Thurston	--	--	--	--	--	2,100	817	--	4,849
Wahkiakum	--	22,035	25,701	--	--	--	--	--	500
Whatcom	--	--	--	--	--	--	6,750	4,992	--
Other, eastern <sup>2</sup>	--	--	420	--	--	--	24,350	--	864
Total <sup>3</sup>	311,263	176,181	658,623	445,656	10,000	43,500	338,266	34,774	280,259
Idaho and Canada	--	--	--	--	--	--	2,000	--	--
Total <sup>3</sup>	311,263	260,099	694,657	445,656	10,000	43,500	340,266	34,774	280,259

Log origin	Log									
	son	Pacific	Pierce	San Juan	Skagit	Skamania	Snohomish	Thurston	Wahkiakum	Whatcom
	--	--	--	--	--	2,500	--	--	--	--
	--	--	--	--	--	--	--	676	--	40,196
	--	--	--	--	--	--	--	676	--	66,380
	--	--	--	--	--	--	--	--	--	9,810
	--	--	18,000	--	--	--	--	--	--	296
	--	--	--	--	--	--	--	--	--	18,000
	--	--	--	--	--	--	--	--	--	247
	--	--	--	--	--	--	--	--	--	6,875
	--	--	18,000	--	--	2,500	--	1,352	--	141,804
	--	--	5,980	--	--	--	6,242	--	--	268,692
	--	--	--	--	--	--	--	--	--	21,685
	--	--	722	--	--	--	--	3,370	--	394,615
100	13,662	25,440	--	--	--	--	--	1,500	--	444,376
	--	--	--	--	4,805	--	--	--	--	17,805
	--	--	--	--	15,000	--	10,752	1,580	--	194,549
	--	--	14,255	--	8,000	--	69,019	4,393	--	322,689
	--	--	4,600	--	1,500	--	--	790	--	18,733
	--	4,306	117,425	--	8,000	--	141,600	8,467	--	684,127
300	--	--	17,950	--	--	--	--	790	--	133,041
	133,109	2,166	--	--	--	--	--	--	39	307,945
000	--	--	177,906	--	--	--	58,035	705	--	250,305
	--	--	--	900	--	--	--	--	--	900
	--	--	--	--	59,785	--	89,079	--	--	56,181
	--	--	12,000	--	--	94,245	1,325	1,352	--	279,682
	--	--	--	--	28,310	--	200,309	6,082	--	9,619
300	--	--	11,484	--	--	--	138,000	13,332	--	173,882
	2,453	--	--	--	--	--	--	--	76	50,765
	--	--	--	--	14,750	--	27,780	--	--	72,869
	--	--	--	--	--	--	28,216	--	--	53,850
000	153,530	389,928	--	900	140,150	94,245	770,357	42,361	115	142,680
	--	--	--	--	--	--	14,859	--	--	30,750
000	153,530	407,928	--	900	140,150	96,745	785,216	43,713	115	173,430
										4,390,201

<sup>1</sup> Does not contain 6,181,000 board feet of pole and piling obtained from Cowlitz, Lewis, Pacific, Skamania, and Clackamas Counties.

<sup>2</sup> Other eastern Oregon and eastern Washington log volumes came from Wasco, Kittitas, Klickitat, Yakima, and Chelan Counties. 14,525,000 board feet of the volume comes from unknown west-side origin.

<sup>3</sup> Totals shown may not agree exactly with totals in other tables due to rounding.



Table 24. — Volume of logs used in western  
(Thousand board feet,

Log origin by State and county	Log								
	Benton	Clackamas	Clatsop	Columbia	Coos	Curry	Douglas	Hood River	Jackson
California:									
Del Norte	--	--	--	--	--	--	--	--	--
Humboldt	--	--	--	--	--	5,161	--	--	--
Siskiyou	--	--	--	--	--	--	--	--	20,524
Total <sup>2</sup>	--	--	--	--	--	5,161	--	--	20,524
Oregon:									
Benton	88,841	3,200	--	10,180	--	--	--	--	--
Clackamas	--	233,879	8,080	17,870	--	--	--	1,254	--
Clatsop	--	12,397	58,453	41,097	--	--	--	--	--
Columbia	--	--	--	75,295	--	--	--	--	--
Coos	--	--	--	--	605,618	5,392	9,248	--	--
Curry	--	--	--	--	116,637	228,851	11,873	--	--
Douglas	--	1,600	--	--	141,559	--	879,661	--	83,478
Hood River	--	--	--	--	--	--	--	58,826	--
Jackson	--	--	--	--	1,616	--	1,079	--	459,092
Josephine	--	3,200	--	--	--	--	5,936	--	35,110
Lane	38,698	6,400	--	--	--	--	1,901	--	--
Lincoln	72,799	10,025	--	--	--	--	--	--	--
Linn	1,200	1,500	--	--	--	--	--	--	--
Marion	--	5,560	--	--	--	--	--	--	--
Multnomah	--	23,129	--	--	--	--	--	--	--
Polk	12,925	1,937	--	--	--	--	--	--	--
Tillamook	--	6,198	751	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Yamhill	--	--	--	--	--	--	--	--	--
Other, eastern <sup>3</sup>	--	4,216	--	--	--	--	--	1,630	57,796
Total <sup>2</sup>	214,463	313,241	67,284	144,442	865,430	234,243	909,698	61,710	635,476
Washington:									
Clallam	--	1,620	--	--	--	--	--	--	--
Clark	--	--	--	--	--	--	--	--	--
Cowlitz	--	--	6,516	46,180	--	--	--	--	--
Grays Harbor	--	--	--	6,300	--	--	--	--	--
Lewis	--	--	--	29,700	--	--	--	--	--
Pacific	--	3,487	--	7,395	--	--	--	--	--
Skamania	--	3,750	6,516	12,383	--	--	--	47,467	--
Wahkiakum	--	3,874	25,547	10,811	--	--	--	--	--
Other, eastern <sup>3</sup>	--	--	--	--	--	--	--	314	--
Total <sup>2</sup>	--	12,731	38,579	112,769	--	--	--	47,781	--
Total <sup>2</sup>	214,463	325,972	105,863	257,211	865,430	239,404	909,698	109,491	656,000

<sup>1</sup> Multnomah County also consumed 600,000 board feet that was imported from the Philip-pines. This volume is not included in the table.

<sup>2</sup> Totals shown may not agree exactly with totals in other tables due to rounding.

<sup>3</sup> Eastern Oregon and eastern Washington log volumes from Klamath, Wasco, Lake, and Yakima Counties.



Oregon counties, by county of origin, 1966  
Scribner log rule)

destination										
Josephine	Lane	Lincoln	Linn	Marion	Multnomah <sup>1</sup>	Polk	Tillamook	Washington	Yamhill	Total
--	--	--	--	--	--	--	--	--	--	--
3,600	--	--	--	--	--	--	--	--	--	3,761
17,800	--	--	--	--	--	--	--	--	--	38,321
21,400	--	--	--	--	--	--	--	--	--	47,867
--	4,672	252	3,487	--	--	27,863	--	--	--	138,495
--	--	--	5,500	15,025	65,025	200	--	--	--	346,833
--	--	--	--	--	13,075	--	--	22,625	1,093	148,740
--	--	--	--	--	11,700	--	--	--	--	86,995
--	9,382	--	--	--	--	--	--	--	--	629,640
8,852	--	--	--	--	--	--	--	--	--	366,213
8,663	281,067	--	--	--	--	--	--	--	--	1,396,028
--	--	--	--	--	--	--	--	--	--	58,826
6,242	--	--	--	--	--	--	--	--	--	468,029
120,156	--	--	--	--	--	--	--	--	--	164,402
--	1,317,400	3,560	72,905	8,486	--	18,607	1,445	--	--	1,469,402
--	3,750	130,242	21,625	25,201	--	80,363	31,434	--	56,755	432,194
--	73,011	--	337,481	83,933	4,950	16,575	--	--	--	518,650
--	--	--	34,739	79,166	--	3,800	--	--	1,932	125,197
--	--	--	--	--	8,490	--	--	--	--	31,619
--	--	--	--	16,802	3,240	54,074	--	--	21,278	110,256
--	--	--	--	5,776	9,630	14,294	120,430	14,985	50,496	222,560
--	--	--	--	--	1,500	--	--	22,325	--	23,825
--	--	--	--	--	2,220	24,004	2,528	7,275	42,371	78,398
--	4,500	--	--	--	2,600	--	--	--	--	70,742
143,913	1,693,782	134,054	475,737	234,389	122,430	239,780	155,837	67,210	173,925	6,887,044
--	--	--	--	--	1,200	--	--	--	--	2,820
--	--	--	--	--	250	--	--	--	--	250
--	--	--	--	--	6,600	--	--	--	--	59,296
--	--	--	--	--	--	--	--	--	--	6,300
--	--	--	--	--	--	--	--	--	--	29,700
--	--	--	--	--	6,275	--	--	--	--	17,157
--	--	--	--	--	45,150	--	--	--	--	115,266
--	--	--	--	--	3,770	--	--	--	--	44,002
--	--	--	--	--	--	--	--	--	--	314
--	--	--	--	--	63,245	--	--	--	--	275,105
165,313	1,693,782	134,054	475,737	234,389	185,675	239,780	155,837	67,210	173,925	7,209,234

Table 25. — Volume of logs used in northern California counties, by county of origin, 1966

(Thousand board feet, Scribner log rule)

Log origin by State and county	Log destination				
	Del Norte	Humboldt	Siskiyou	Trinity	Total
California:					
Del Norte	194,234	59,840	--	--	254,074
Humboldt	80,592	994,427	--	41,282	1,116,301
Siskiyou	--	41,427	429,460	--	470,887
Trinity	--	44,798	14,225	148,443	207,466
Other <sup>1</sup>	--	2,040	47,005	--	49,045
Total	274,826	1,142,532	490,690	189,725	2,097,773
Oregon:					
Curry	19,760	--	--	--	19,760
Josephine	2,373	--	--	--	2,373
Total	22,133	--	--	--	22,133
Total	296,959	1,142,532	490,690	189,725	2,119,906

<sup>1</sup> Other volume from Mendocino, Shasta, and Modoc Counties.

Table 26. — National Forest logs used, by forest type (Thousand board feet)

Type of plant									
	Deschutes	Fremont	Gifford Pinchot	Klamath	Mount Baker	Mount Hood	Okanogan	Olympic	Rogue River
Shake and shingle	--	--	178	--	7,160	--	--	4,737	--
Sawmills <sup>1</sup>									
D	--	--	22,897	2,800	7,050	12,272	--	590	--
C	--	--	70,527	7,650	28,655	52,397	--	4,970	2,270
B	--	--	34,723	145,543	55,000	66,883	--	6,980	106,100
A	--	--	138,110	46,193	9,827	116,125	1,350	154,107	13,900
Total	--	--	266,257	202,186	100,532	247,677	1,350	166,647	120,300
Veneer	--	1,800	67,478	46,995	--	19,290	--	32,500	31,500
Veneer and plywood <sup>2</sup>	1,600	--	114,288	4,691	38,469	47,089	--	56,472	53,500
Pulp	--	--	19,106	--	100,027	6,800	--	36,623	--
Total	1,600	1,800	467,307	253,872	246,188	320,856	1,350	296,979	205,400

<sup>1</sup> Sawmills denoted as follows: class A mills = 120,000+ board feet capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

<sup>2</sup> Integrated operations producing both veneer and plywood.

and type of plant, Douglas-fir region, 1966  
 Scribner log rule)

National Forest									
Shasta-Trinity	Siskiyou	Siuslaw	Six Rivers	Snoqualmie	Umpqua	Wenatchee	Willamette	Winema	Total
--	--	1,350	--	834	--	150	2,250	--	16,659
--	600	1,102	--	1,695	--	4,933	3,724	4,200	61,863
68,135	242	60,201	26,155	25,321	48,806	1,200	102,653	--	497,154
66,449	18,167	104,709	41,074	30,000	105,078	3,600	162,428	12,900	959,733
53,553	83,351	66,876	71,920	20,350	51,208	3,650	167,918	1,139	999,631
188,137	102,360	232,888	139,149	77,366	205,092	13,383	436,723	18,239	2,518,381
7,320	26,128	51,961	60,914	21,880	140,663	--	171,919	2,898	683,285
2,007	85,312	54,373	9,741	62,338	107,336	370	279,728	1,100	918,431
--	5,649	1,606	--	53,632	--	--	--	--	223,443
197,464	219,449	342,178	209,804	216,050	453,091	13,903	890,620	22,237	4,360,199



Table 27. — National Forest logs used by  
(Thousand board feet)

State and county	National Forest								
	Deschutes	Fremont	Gifford Pinchot	Klamath	Mount Baker	Mount Hood	Okanogan	Olympic	Rogers River
California:									
Del Norte	--	--	--	--	--	--	--	--	--
Humboldt	--	--	--	39,627	--	--	--	--	--
Siskiyou	--	--	--	187,953	--	--	--	--	--
Trinity	--	--	--	--	--	--	--	--	--
Total	--	--	--	227,580	--	--	--	--	--
Oregon:									
Benton	--	--	--	--	--	--	--	--	--
Clackamas	1,600	--	3,750	--	--	192,583	--	--	--
Clatsop	--	--	7,820	--	--	5,213	--	--	--
Columbia	--	--	14,680	--	--	5,090	--	--	--
Coos	--	--	--	--	--	--	--	--	--
Curry	--	--	--	--	--	--	--	--	--
Douglas	--	--	--	--	--	--	--	--	--
Hood River	--	--	47,357	--	--	42,111	--	--	--
Jackson	--	--	--	12,692	--	--	--	--	195,400
Josephine	--	--	--	13,600	--	--	--	--	9,442
Lane	--	1,800	--	--	--	--	--	--	--
Lincoln	--	--	--	--	--	--	--	--	--
Linn	--	--	--	--	--	599	--	--	--
Marion	--	--	--	--	--	9,503	--	--	--
Multnomah	--	--	27,890	--	--	60,507	--	--	--
Polk	--	--	--	--	--	--	--	--	--
Tillamook	--	--	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--	--	--
Yamhill	--	--	--	--	--	--	--	--	--
Total	1,600	1,800	101,497	26,292	--	315,606	--	--	205,400
Washington:									
Clallam	--	--	--	--	795	--	--	45,797	--
Clark	--	--	50,537	--	--	2,750	--	--	--
Cowlitz	--	--	52,783	--	--	--	--	--	--
Grays Harbor	--	--	--	--	--	--	--	97,707	--
Island	--	--	--	--	--	--	--	--	--
Jefferson	--	--	--	--	--	--	--	4,200	--
King	--	--	12,059	--	7,200	--	1,350	15,597	--
Kitsap	--	--	--	--	2,627	--	--	7,357	--
Lewis	--	--	126,356	--	--	--	--	--	--
Mason	--	--	--	--	--	--	--	101,500	--
Pacific	--	--	--	--	--	--	--	--	--
Pierce	--	--	31,051	--	--	--	--	3,971	--
San Juan	--	--	--	--	--	--	--	--	--
Skagit	--	--	--	--	31,713	--	--	8,000	--
Skamania	--	--	88,120	--	--	2,500	--	--	--
Snohomish	--	--	--	--	135,762	--	--	11,270	--
Thurston	--	--	4,904	--	845	--	--	1,580	--
Wahkiakum	--	--	--	--	--	--	--	--	--
Whatcom	--	--	--	--	67,246	--	--	--	--
Total	--	--	365,810	--	246,188	5,250	1,350	296,979	--
Total Forest	1,600	1,800	467,307	253,872	246,188	320,856	1,350	296,979	205,400

forest and county, Douglas-fir region, 1966  
Scribner log rule)

Forest									
Shasta-Trinity	Siskiyou	Siuslaw	Six Rivers	Snoqualmie	Umpqua	Wenatchee	Willamette	Winema	Total
--	3,936	--	38,447	--	--	--	--	--	42,383
31,490	--	--	136,579	--	--	--	--	--	207,696
59,060	--	--	--	--	--	--	--	--	247,013
106,914	--	--	33,978	--	--	--	--	--	140,892
197,464	3,936	--	209,004	--	--	--	--	--	637,984
--	--	75,931	--	--	--	--	--	--	75,931
--	3,200	--	--	--	1,600	--	10,250	--	212,983
--	--	--	--	--	--	--	--	--	13,033
--	68,288	8,221	--	--	--	--	--	--	19,770
--	79,002	--	--	--	--	--	--	--	76,509
--	--	--	--	--	341,440	--	--	--	79,002
--	--	--	--	--	--	--	--	--	341,440
--	--	--	--	--	57,886	--	--	--	89,468
--	65,023	--	800	--	--	--	--	22,237	288,624
--	--	120,691	--	--	--	--	--	--	89,065
--	--	21,216	--	--	52,165	--	588,275	--	762,931
--	--	--	--	--	--	--	--	--	21,216
--	--	14,217	--	--	--	--	158,994	--	159,593
--	--	210	--	--	--	--	124,101	--	147,821
--	--	21,018	--	--	--	--	--	--	88,607
--	--	19,439	--	--	--	--	--	--	21,018
--	--	--	--	--	--	--	--	--	19,439
--	--	61,235	--	--	--	--	--	--	--
--	215,513	342,178	800	--	453,091	--	881,620	22,237	61,235
--	--	--	--	--	--	--	--	--	2,567,685
--	--	--	--	--	--	--	--	--	46,592
--	--	--	--	--	--	--	--	--	53,287
--	--	--	--	--	--	--	--	--	52,783
--	--	--	--	--	--	--	--	--	97,707
--	--	--	--	--	--	--	--	--	--
--	--	--	--	20,875	--	12,703	--	--	4,200
--	--	--	--	--	--	--	--	--	69,784
--	--	--	--	25,378	--	--	--	--	9,984
--	--	--	--	--	--	--	--	--	151,734
--	--	--	--	--	--	--	--	--	101,500
--	--	--	--	78,853	--	--	9,000	--	--
--	--	--	--	--	--	--	--	--	122,875
--	--	--	--	10,000	--	--	--	--	--
--	--	--	--	--	--	--	--	--	49,713
--	--	--	--	59,773	--	--	--	--	90,620
--	--	--	--	10,475	--	1,200	--	--	208,005
--	--	--	--	--	--	--	--	--	17,804
--	--	--	--	10,696	--	--	--	--	--
--	--	--	--	--	--	--	--	--	77,942
--	--	--	--	216,050	--	13,903	9,000	--	1,154,530
197,464	219,449	342,178	209,804	216,050	453,091	13,903	890,620	22,237	4,360,199





Austin, John W.

1969. Timber flows and utilization patterns in the Douglas-fir region, 1966. Pacific Northwest Forest & Range Exp. Sta. USDA Forest Serv. Res. Pap. PNW-89, 89 pp., illus.

The forest industries in the Douglas-fir region of Washington, Oregon, and California are grouped by economic areas. Each area's dependency on forest industries employment is presented. Log consumption in 1966 by the region's forest industries is identified in each area by mill type and size class. Source of logs used by each mill type and size class is shown by economic area and landownership class. Log flows between economic areas are also identified. Appendix tables present data by State and county.

Austin, John W.

1969. Timber flows and utilization patterns in the Douglas-fir region, 1966. Pacific Northwest Forest & Range Exp. Sta. USDA Forest Serv. Res. Pap. PNW-89, 89 pp., illus.

The forest industries in the Douglas-fir region of Washington, Oregon, and California are grouped by economic areas. Each area's dependency on forest industries employment is presented. Log consumption in 1966 by the region's forest industries is identified in each area by mill type and size class. Source of logs used by each mill type and size class is shown by economic area and landownership class. Log flows between economic areas are also identified. Appendix tables present data by State and county.

Austin, John W.

1969. Timber flows and utilization patterns in the Douglas-fir region, 1966. Pacific Northwest Forest & Range Exp. Sta. USDA Forest Serv. Res. Pap. PNW-89, 89 pp., illus.

The forest industries in the Douglas-fir region of Washington, Oregon, and California are grouped by economic areas. Each area's dependency on forest industries employment is presented. Log consumption in 1966 by the region's forest industries is identified in each area by mill type and size class. Source of logs used by each mill type and size class is shown by economic area and landownership class. Log flows between economic areas are also identified. Appendix tables present data by State and county.

Austin, John W.

1969. Timber flows and utilization patterns in the Douglas-fir region, 1966. Pacific Northwest Forest & Range Exp. Sta. USDA Forest Serv. Res. Pap. PNW-89, 89 pp., illus.

The forest industries in the Douglas-fir region of Washington, Oregon, and California are grouped by economic areas. Each area's dependency on forest industries employment is presented. Log consumption in 1966 by the region's forest industries is identified in each area by mill type and size class. Source of logs used by each mill type and size class is shown by economic area and landownership class. Log flows between economic areas are also identified. Appendix tables present data by State and county.

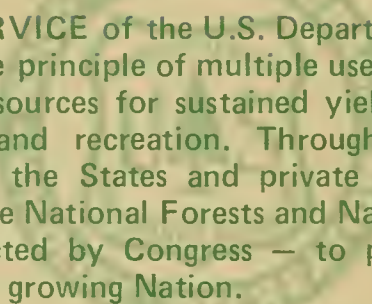


Headquarters for the PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION is in Portland, Oregon. The Station's mission is to provide the scientific knowledge, technology, and alternatives for management, use, and protection of forest, range, and related environments for present and future generations. The area of research encompasses Alaska, Washington, and Oregon, with some projects including California, Hawaii, the Western States, or the Nation. Project headquarters are at:

College, Alaska  
Juneau, Alaska  
Bend, Oregon  
Corvallis, Oregon  
La Grande, Oregon

Portland, Oregon  
Roseburg, Oregon  
Olympia, Washington  
Seattle, Washington  
Wenatchee, Washington





The FOREST SERVICE of the U.S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives — as directed by Congress — to provide increasingly greater service to a growing Nation.